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"CULTIVATION AND MARKETING OF FLOWERS IN INDIA"-AN EMPIRICAL STUDY

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ABSTRACT

Flowers are generally in addition to facilitating the reproduction of flowering plants, flowers have long been admired and used by humans to beautify their environment, and also as objects of romance, ritual, religion, medicine. The role of flowers in our life has been immense during the course of the history. The importance of flowers can be traced back to various religious texts, folk tales and myths apart from their use in weddings. Some of the flowers were used as food and are still eaten by many tribes, while others are used as medicines. Early man also recognized the aesthetic role of flowers; in fact, some ancient cultures believed that they could appease the spirits of their ancestors by decorating their tombs with a particular type of flower.

An essential role of flowers in our life is that it is used to convey emotions and thoughts. Over time a certain meaning has been attached to flowers. And now we have flowers for every emotion, be it love, grief, happiness, or gratitude. The try expresses to your loved ones with the gift of flowers. Apart from that, the role of flowers in life also extends to affecting our moods. The presence of colourful flowers around you soothes you and brightens your mood. The healing properties of flowers have also been proven by scientific research.

The research study mainly focuses on what cultivate the flowers in India, the usages of a size of plant or land. The usages of flowers from beneficiaries and cut-flowers export zones of India.

KEYWORDS: Cultivation of Flowers, Usage of Flowers, Cut-Flowers Export in India

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INTRODUCTION

Flowers are inseparable from the social fabric of human life. Flowers being an 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 fulfil 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 lifestyle of people leading to the 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. The science and art of commercial floriculture has been recognised 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 is increasing worldwide over the coming years

India's 'flower power' continues to bloom with the country emerging as the second largest grower of flowers around the world, surpassed only by China. About 2,33,000 hectares across the country was used for floriculture, producing 17,29,000 metric tonnes (MT) of loose flowers and 76,732 lakh cut flowers, according to the latest data from the National Horticulture Board for 2012-13.

Andhra Pradesh leads in loose flowers production with 2,24,410 MT cultivated over 34,850 hectares, followed by Karnataka at 2,07,500 MT cultivated in 29,700 hectares and TamilNadu with 3,12,970 MT grown in 28,700 hectares.

West Bengal has emerged as the largest producer of cut flowers with 25,429 lakh pieces, followed by Karnataka and Maharashtra.

Other prominent cut flowers producing states are Andhra Pradesh, Orissa, Uttar Pradesh, Assam, Uttarakhand, Himachal Pradesh and Jharkhand.

The rise in area under flower cultivation is also attributable to strong rising domestic demand and a strong demand for flowers especially for events like Christmas, New Year's Eve, Valentine's Day and Mother's Day.

IMPORTANCE OF FLOWERS

Flowers' importance in nature is everywhere—It can feed insects, birds, animals and humans; provide natural medicines for humans and some animals; and aid in a plant's reproduction by enticing outside pollinators. Without flowers, plants would merely be green, and the world would be a duller place. Reproduction – The flower is the reproductive organ of the plant. It is what (following pollination) produces the fruit or vegetable that we eat. It is also where the seed is produced so that more of the same plant will grow in the future. Customised floral displays, wreaths, and bouquets have become an integral element of many after-death services and memory celebrations. Unfortunately, most of the people are unaware about the significant of environmental and social costs of mass-produced flowers. The global floral industry, with many large-scale flower farms and hothouses in South and Central America, routinely transgresses established fair trade and fair earth practices.

Food for Insects – The nectar and pollen produced by the flower are what is eaten by many insects that in turn pollinate the flower, which is it results in a fruit or vegetable that we eat. Some of the most important pollinators that are attracted by flowers include bees, wasps, ants, and butterflies. Further, unless we have been living under a rock, we know that we are facing a worldwide epidemic involving the loss of bees. Anytime we can promote their health and vitality, the better and one way we can do that is by planting more flowers. Food for Humans – As already mentioned, the flower produces the fruit or vegetable that we eat. Bees also produce honey as a byproduct of their work. Attract Beneficial Insects – Planting flowers is one main way that we can attract beneficial insects to our garden. These are including the pollinators that were mentioned above, but also the ones that eat other harmful bugs. Lacewings and ladybugs are two beneficial insects that do just that.

FLOWERS OF MEDICINAL IMPORTANCE

In recent years the indigenous system of medicine particularly Ayurveda is attracting modern scientists for finding cures for many challenging diseases. It has been confirmed by World Health Organization that herbal medicines serve the health needs of about 80% of world's population, especially for millions of people in the vast rural areas of developing countries. The recent resurgence of plant remedies results from the effectiveness of plant medicines compared to harmful side effects of most modern drugs.

REVIEW OF LITERATURE

Agarwal and Duhijod[1] in their study try to explain how marigold, chrysanthemum and daisy have been produced more than that of gallardia, wheat, soyabean and irrigated cotton. Marigold generates opportunities of gainful employment for the rural womenfolk who are good at flower harvesting. Human labour costs account for 75 per cent of total input cost in marigold as compared to 45 per cent and 41 percent in chrysanthemum and daisy respectively. Irrigation cost as a percentage of total input cost was also higher in daisy (40 percent) as compared to marigold and chrysanthemum. Daisy flower yields the same benefit as chrysanthemum but the per kg cost is very low in daisy due to more physical productivity as compared to chrysanthemum.

According to **Anil Urs**[2] during Valentine Day celebrations, along with the bulk order, Tanflora was able to fetch a better price of Rs. 20 a stem compared with the previous year's Rs.16-Rs.18. Normally red roses grown in the country fetch Rs.15-Rs.18 a stem in the European Markets during the season, but owing to bulk supply, our price realization was higher this year.

Desai[3] in his study on the production of roses has pointed out in no uncertain terms that the costs of production of cut roses are bound to go up in view of the frightful volatility about the fixed cost which form 36.51 percent of the total cost and the variable cost which forms the remaining

[1]Agarwal, K.G., and D.D. Duhijod, "An Economic Analysis of Winter Floriculture Grown in Vicinityof Nagpur City of Maharashtra", Indian Journal of Agricultural Economics, Vol.52, No.3, July- September 1997, pp.622-623.

[2] Anil Urs, "Tanflora Exports 1 mn cut Roses to Europe", Business Standard, 07.03.2007.

[3] Desai, R.G., Economics of Floriculture, Himalaya Publishing House, Delhi, India, 2004, p.148.

63.49 percent. The cost of production of roses remain volatile in India because the prices of most of its basic inputs have not been under anybody's control.

Kalirajan et al.,[4] in their study "Sources of Output Growth in Indian Agriculture" found that the cultivations of horticultural crops like fruits, flowers and vegetables is much more profitable and labour intensive than the field crops.

Thimmappa and Mahesh[5] in their work "Conservation Farming as an Alternative to Shifting Cultivation in Meghalaya - An Economic Evaluation" among the different farming systems have found out that the horticultural farming can assure any one the maximum annual net return of Rs.40,115/- per hectare, closely followed by livestock based farming system with Rs.35,421/- per hectare.

THE SCOPE OF FLORICULTURE

The scope of floriculture is next only to the Information Technology Industry all over the world and this is growing by leaps and bounds. Floriculture is not just a business but is also a perennial source of income. Floriculture is very dynamic marketing trend today. All private banks, Big Hospitals, corporate houses, event management companies are using flowers in their offices. In addition that weddings big or small scale, filmmakers, political parties, exhibition and conference organisers are consuming flowers for decoration.

FLOWER EXPORTS FROM INDIA

Indian floriculture industry has been shifting from traditional flowers to cut flowers for export purposes. After liberalisation, the Government of India identified floriculture as a sunrise industry and accorded it 100 percent export oriented status. The liberalised economy has given an impetus to the Indian Entrepreneurs for establishing export oriented floriculture units under

[4] Kalirajan, K.P., and et al., "Sources of output Growth in Indian Agriculture", Indian Journal of Agricultural Economics, Vol.52, No.4, October-December 1997, pp.689-692.

[5] Thimmappa, K., and N. Mahesh, "Conservation Farming as an Alternative to Shifting Cultivation in Meghalaya - An Economic Evaluation" Indian Journal of Agricultural Economics, (2006) Vol.61, No. 3, July-September 2006, pp.304.

controlled climatic conditions. In India Maharastra, Karnataka, Tamil Nadu, Andhra Pradesh and Haryana have emerged as major floriculture centres in recent years.

The major importers of live plants and bulbs are Germany, France, Italy, U K. U S A and Japan. The major importers of cut flowers are Germany, U S A, U K, U A E, France, Netherlands, Italy, and Japan. Indian exports are mainly to European countries including Netherlands, Germany, U.K., Italy and France. The Netherlands consumes 50 percent of our total exports demand from the U.K is also increasing.

CUT FLOWER EXPORTS FROM INDIA

While the long experience of flower growing in the open field conditions enables sufficient flower production for domestic markets, the quality of the produce, in view of its exposure to various kinds of biotic and abiotic stresses, is not suitable for the ever growing export market. The production technology for flowers under protected environment of greenhouses needs to be standardised. There is hardly any post harvest management of flowers for the domestic market. Availability of surplus flowers from exports for sale in the domestic market has increased the appreciation of quality produce and the demand for good quality flowers is increasing. With the introduction of new varieties of crops in the country, facilities for generating their planting material for large scale production need strengthening. Special attention needs to be paid to strengthen the marketing infrastructure like organised marketing yards, auction platforms, controlled condition storage chambers etc.

Table 1.1

CUT FLOWER EXPORTS FROM INDIA

(Rupees in Millions)

Country	2010-2011	2012-2013	2013-2014
Japan	322.50	8255.58	35932.56
Netherlands	1004.61	9102.49	24799.90
U.S.A.	1175.38	2495.21	17652.50

Germany	957.61	2538.63	9256.00
U.K.	1420.93	1113.78	3345.86
U.A.E.	2120.40	3388.19	2459.29
Italy	210.28	164.96	2200.49
Hongkong	730.02	903.15	1504.02
Singapore	78.45	437.37	1190.54
Nepal	11.86	36.09	292.64
Kuwait	24.22	5.00	274.13
Saudi Arabia	413.98	169.52	272.77
Switzerland	136.96	258.20	242.83
Hungary	-	286.69	181.82
Thailand	-	86.49	177.82
Australia	-	-	132.89
Russia	368.46	20.96	119.85
Others	988.68	719.39	9293.82
Total	**9964.34**	**29981.60**	**109329.73**

Source: Division of Floriculture, Indian Agricultural Research Institute,
New Delhi, India 2012.

The production for exports at present has suffered due to a few constraints. While our growers have been successful in producing world class quality at low cost, high air freight rates, low cargo capacity available, an imposition of import duties, inadequate export infrastructure etc. have reduced their competitiveness.

There is also a shortage of trained manpower to handle commercial floriculture activity. The demands of the growing export oriented industry would require adequate attention to be paid for human resource development, particularly at the supervisory level.

MARKETING OF CUT FLOWERS

Marketing of cut flowers in India is much unorganised at present. In most of the metropolitan cities, have large market potential; flowers are brought to wholesale markets, which mostly operate in open yards. A few large flower merchants generally buy most of the produce and distribute them to local retail outlets after significant markup. The retail florist shops also usually operate in the open on-road sides, with different flowers arranged in large buckets. In the metros, however, there are some good florist showrooms, where flowers are kept in controlled temperature conditions, with considerable attention to value-added service. The government is now investing in setting up of auction platforms, as well as organised florist shops with better storage facilities to prolong shelf life.

The packaging and transportation of flowers from the production canter to the wholesale markets at present is very unscientific. The flowers, depending on the kind, are packed in old gunny bags, bamboo baskets, simple cartoons or just wrapped in old newspapers and transported to markets by road, rail or by air. The mode of transportation depends on the distance to the markets and the volume. Mostly, flowers are harvested in the evening time and transported to nearby cities by overnight trains or buses. In recent years, the government has provided some assistance for buying refrigerated carriage vans. A large number of export-oriented units have built up excellent facilities of pre-cooling chambers, cold stores and reefer vans and their produce coming for domestic market sales are thus of very good quality and have longer vase life and command

the higher price. The government programmes for floriculture development include creating common facilities of a cool chain in large production areas to be shared on a cooperative basis. Formation of growers' cooperatives associations is being encouraged.

In view of the unorganised setup, it is difficult to estimate the size of flower trade, both in terms of volume and value. A study conducted in 1989 estimated the trade to be worth Rs. 2050 million. It is in the period of the last five years or so that this business has really boomed in India, which is reflected in the number of new florist outlets in all cities and increase in the public's purchase of flowers as gifts. This would put the current trade at several times the earlier estimate. A recent study of Delhi market alone put the value of flowers traded on wholesale as Rs. 500 million.

GLOBAL AREA PRODUCTION OF FLOWERS

The Asia-Pacific region has a share of more than two-thirds in the world acreage, due to China and India. China with 40 % and India with 15 % have a majority in the world acreage of flowers and plants. Japan, Taiwan and Thailand are other major flower producing countries in this region. The area of flowers in Africa is very small with a share of 1.4 %. Kenya is the largest African grower. The United States and Mexico are among the most important world producers. Graph 1 shows the most important producers of flowers and plants in the world with their share of the world area of flowers and plants in the year 2013.

Table 1.2

GLOBAL AREA PRODUCTION OF FLOWER

SL. No.	Country	Percentage
1.	China	40
2.	India	15
3.	Europe	12
4.	United States	6
5.	Japan	5
6.	Mexico	5
7.	Taiwan	3

8.	Brazil	2
9.	Thailand	2
10.	Colombia	2
11.	Korea	1
12.	Others	7

Source: Indian Horticulture Database NHB, New Delhi.

FLOWERS CULTIVATION IN INDIA

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. The flowers are also used for the production of perfumed hair oils and attars. Jasmine essential oil has a sweet and floral aroma. It is regarded as unique, as it blends well with other floral extracts and which is highly valued throughout the world for its high-grade perfumes, which is used in soap and cosmetic industries and in flavouring mouthwash liquids. 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, dysmenorrheal, labour pains, uterine disorders and many skin problems.

Table 1.3

MAJOR FLOWERS CULTIVATION STATES IN INDIA

STATE	**AREA (ha.)**
Karnataka	19,161
Tamil Nadu	14,194
West Bengal	12,285
Andhra Pradesh	5,933
Maharashtra	3,356
Rajasthan	1,985
Delhi	1,878
Haryana	1,540

Madhya Pradesh	1,270
Uttar Pradesh	1,000
Others	2,166
Total	**64,768**

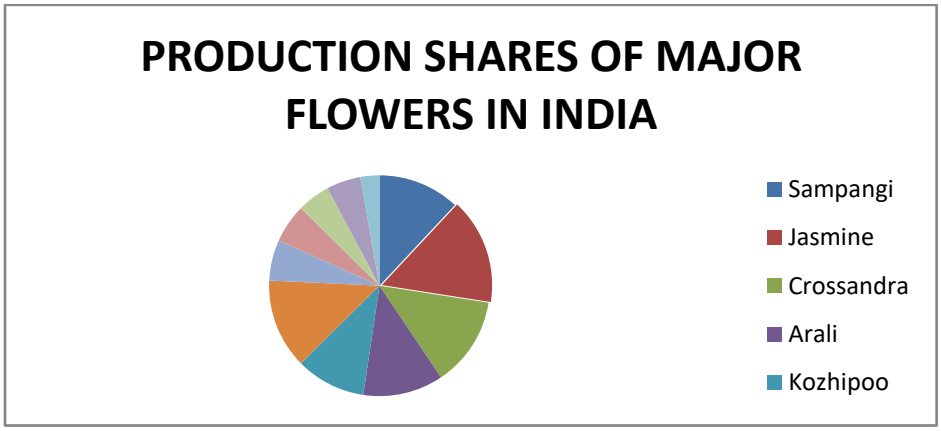
Source: Indian Horticulture Database.2014, National Horticulture Board, New Delhi.

It is inferred from table 1.3 that Karnataka occupies the first position in producing Flowers in India. In order to have been the clear idea about the major production of Flowers in India. India has a comparative advantage in flowers whose global markets are expanding very fast. India occupies the second position in the world in the production of Flowers. In spite of this, only one percent of the total Flowers are being processed in the country. India's supremacy in the production of Flowers can make it an "uncrowned king" of the World Market.

The growers remind that the quality of the Flowers relays on the nature of the soil, weather and water. The failure in any one of the above facts resulted in low productivity and quality too. To get nutritious value Flowers, the grower should take care to keep the products off from pests, insects, etc. In order to have a clear idea about the major Flowers production share in India, data are plotted in chart 1.1

Chart 1.1

PRODUCTION SHARES OF MAJOR FLOWERS IN INDIA



Source: Indian Horticulture Database, 2014, New Delhi.

It is noted from the chart that potato occupies the first place with the share of 28.8 percent in the total production of Flowers in India.

TAMILNADU

Tamil Nadu is one of the leading horticulture States in India contributing 7.7 percent to the National Horticultural Production with 5.7 percent of the national level area. Tamil Nadu has been blessed with diversified agro-climatic conditions, suitable for a wide range of horticulture crops like fruits, Flowers, spices, plantation crops, flowers and medicinal plants.

A large extent of wastelands and under – utilised lands are available in the state for horticulture development. Tamil Nadu has a long coastal belt of 1000 Km. suitable for crops like cashew, coconut, tropical orchids etc. The southern part of Tamil Nadu has the potential for growing off – season mangoes and grapes.

A lot of awareness has been created among the growers of Tamil Nadu about the cultivation of high-value horticulture crops. It is aimed to achieve 8 percent annual growth rate during XI five – Year Plan in the horticultural sector.

Table 1.4

AREA, PRODUCTION, PRODUCTIVITY OF VARIOUS HORTICULRAL CROPS FOR THE YEARS 2011 -14

Sl. No	Crops	2011-2012			2012-2013 (provisional)			2013-2014 (Estimated)		
		Area	Prdn	Pdy	Area	Prdn	Pdy	Area	Prdn	Pdy
1.	Fruits	2.21	36.09	16.33	2.39	39.08	16.37	2.58	42.31	16.41
2.	Vegetable	1.91	46.73	26.47	2.06	50.59	24.53	2.23	54.78	24.59
3.	Spices	1.54	6.93	4.49	1.67	7.50	4.50	1.80	8.12	4.51
4.	Plantation Crops	2.34	8.02	3.43	2.53	8.68	3.44	2.73	9.40	3.44
5.	Flowers	0.20	1.62	7.97	0.22	1.75	7.99	0.34	1.89	8.01
6.	Medicinal Plants	0.04	0.08	1.90	0.04	0.08	1.90	0.05	0.09	1.90
	Total (All crops)	8.24	99.47	12.06	8.91	107.68	12.09	9.73	116.59	12.12

Source: Indian Horticulture Database-2014, New Delhi.

Floriculture is the art and knowledge of growing flowers to perfection. It deals with the cultivation of flowers and ornamental crops from the time of planting to the time of harvesting. It also includes the production of planting materials through seeds, cuttings, budding, grafting and marketing of flowers and flower produces. It includes cultivation of flowering and ornamental plants for sales or for use as raw materials in cosmetics, Perfume industry and also Pharmaceutical sector.

India is bestowed with several agro-climatic zones conducive for production of sensitive and delicate floriculture products. This era has seen a dynamic shift from sustenance production to commercial production. As per National Horticulture Database 2010 published by National Horticulture Board, during 2009-10, the area under floriculture production in India was 0.183 million hectares with a production of 1.021 million loose flowers and 666.7 million cut flowers. Floriculture is now commercially cultivated in several states with Tamil Nadu (25%) Karnataka (20%), Andhra Pradesh (14%) having gone ahead of other producing states like Maharashtra, Punjab, Haryana, West Bengal, Gujarat, Orissa, Jharkhand, Uttar Pradesh and Chattisgarh.

India's total export of floriculture was Rs.286.45 crores in 2010-11. The major importing countries were USA, Pakistan, Netherlands, Germany, Italy, Belgium and United Kingdom. There are more than 300 export-oriented units in India. More than 50% of the floriculture units are based in Karnataka, Andhra Pradesh and Tamil Nadu. With the help of technical collaborations from foreign companies, the Indian floriculture industry is poised to increase its share in world trade.

In Tamil Nadu, out of the total area of cultivation under Horticulture and Plantation crops of 922005 ha, the flowers occupy 25610 ha. Dindigul, Krishnagiri, Dharmapuri, Salem, Vellore, Madurai, Tiruvannamalai, Tirunelveli, Pudukkottai and Erode are the major flowers growing districts in our State.

The major flowers grown are Jasmine, Mullai, Rose, Crossandra, Chrysanthemum, Marigold, Tuber Rose, Arali, Kozhipoo etc. The Area, Production and Productivity of the major flower crops grown in Tamil Nadu are

Table 1.5

AREA, PRODUCTION AND YIELD RATE OF FLOWERS IN TAMILNADU 2012-2013

Sl. No	Flowers	Area (in Ha)	Production (In Tonnes)	Yield Rate
1.	Rose	1949	14130	7.25
2.	Jasmine	10623	92951	8.75
3.	Mullai	2769	23537	8.50
4.	Jadhi malli	841	7569	9.00
5.	Crossandra	1317	2634	2.00
6.	Chrysanthimum	2240	20160	9.00
7.	Kozhipoo	1502	22530	15.00
8.	Arali	1195	9261	7.75
9.	Tuber rose	1529	15290	10.00
	Others	3174	34343	10.82

Source: Indian Horticulture Database-2014, New Delhi.

STATEMENT OF THE PROBLEM

Agriculture plays a vital role in Indian economy. More than 75 percent of the people in our country tie-up with agriculture directly or indirectly. The natural resources such as soil, water, weather, fertilisers and pesticides make India be one of the greatest agricultural countries in the world. The status of the landholders comes under three divisions – small, medium and large based on the size of land holding. Those who are high in financial position use modern technology and earn more profit. The remaining is unable to come up with them for not using the modern technology due to the deficiency in finance. Natural calamities such as over rainfall, drought and cyclone are other problems faced by all the producers irrespective of financial status. Lack of Education is another problem for the producers. They are unable to find a suitable soil and seed.

Preservation of the flowers is a problem since flowers are liable to sell in a short span. The scarcity of accessories to preserve the flower sends the growers to seek a suitable market for their produce. The grower faces many problems in marketing such as quality maintenance packaging, cold storage, time and price fixing High price fixing boosts the income of the grower, but in marketing, he does not have a chance to fix the price of his products. The merchants and

middlemen are responsible for it. The cost of package, transport, the lapse in time and competitor reduce the profit of the growers.

The production and marketing of flowers, no effort has been made so far to introduce new technologies like shade-Net cultivation and the Green House Technology that have been used effectively in foreign countries. Greenhouses are nothing but covered structures in transparent materials which facilitate flower production under a controlled environment. He seeks to delve deep into this problem pertaining to the study Pudukkottai district initiated the researcher to do this research.

OBJECTIVES OF THE STUDY

The main objectives of the study are to find out the various problems faced by the flower growers and to identify the factors influencing the satisfaction of flowers growers. Under these main objectives have been framed for the present study.

- ✓ To study the production practices of the selected flowers in the Pudukkottai District.
- ✓ To evaluate the marketing practices followed by the growers of the selected flowers.
- ✓ To analyse the various problems faced by the flower growers in Pudukkottai District.
- ✓ To identify the factors influencing the grower's satisfaction on the production and marketing of selected flowers.
- ✓ To offer suggestions based on the findings of the study for the prospects of flower growers.

HYPOTHESIS

TO KEEP THE FRAME OF THE ANALYSIS INTACT AND GIVE A PROPER DIRECTION TO THE STUDY, THE FOLLOWING WORKING HYPOTHESES HAVE BEEN SET UP:

There is no significant association between the socio-economic characteristics (Gender, marital status, community. Education, type of family, the size of the family, the size of landholdings, annual income from cultivation, the timing of sales, indebtedness influences, awareness influences) of the sample growers and their opinion about the existing marketing system.

- There is no association between the problems relating to saplings and seeds.

- There is no association between the problems relating to agricultural loan by the banks.
- There is no association between the problems relating to labour in flower cultivation.
- There is no association between the problems relating to payment of flowers
- There is no association between the cultivation of flowers
- There is no significant difference between problems relating to the marketing of flowers.
- There is no significant problem associated with the department of agriculture.

METHODOLOGY

The designing suitable methodology is important for analysing the data gathered for the study. The present study is based on both primary and secondary data. Primary data were collected through structured interview schedule which is finalised after made pre-test. After the collection of data, the filled up interview schedules are edited properly. A master table is prepared, to sum up, all the information. With the help of the master table, classification tables are prepared and they are taken directly for analysis.

SAMPLING DESIGN

The present study is proposed to cover the cultivation and marketing of flowers in Pudukkottai District. As census method is not feasible, the researcher has proposed to follow sampling. It is decided to select the flowers which are cultivated in more than 100 Acres in Pudukkottai district. The present study selected 5 flowers namely Sampangi, Jasmine, Arali, Kozhipoo and Crossandra, in the universe of 21 flowers cultivated in the district. These flowers are mainly cultivated in all blocks of the district. Pudukkottai District Consist of Alangudi, Vadakadu, Pudukkottai, Thirumayam, and one block Karambakkudi A selection of 240 flower growers is made on a simple random basis at the rate of 40 from each Taluk and One block.

SOURCES OF DATA

The study is empirical in nature based on survey method. The primary data relating to the production, problems and satisfaction are collected by the interviewing the growers with the help of the interview schedule. The secondary data relating to the study of the area, production and yield in Tamilnadu and in Pudukkottai district are obtained from various published and

unpublished records, annual reports, bulletins, booklets, journals, magazines, etc, the study is individual grower oriented and the factors selected are personal in character.

TOOLS OF ANALYSIS

The following parametric statistical tools are used for the present study.

- X^2 test
- Correlation
- Analysis of Variance (ANOVA)

STATISTICAL ANALYSIS AND INTERPRETATION

Cultivation of Flowers occupies a predominant position in Indian agriculture. It has led to the growth and development of the socio – economic fabric of agriculturalist. TamilNadu is one of the leading flowers production centres in South India. The growers in Pudukkottai district are facing many problems faced by the growers of flowers. The researcher has identified the following problems.

- Problems relating saplings and seeds
- Problems relating to agricultural loan by the banks
- Problems relating to labour in flowers cultivation
- Problems relating to payment of flowers
- Problems relating to the cultivation of flowers.
- Problems relating to the marketing of flowers.

Problems associated with the department of agriculture.

In order to analyse the problems faced by the growers of flowers, the researcher has used Garrett's ranking method to rank the important problems faced by the growers in flowers cultivation. The Variables like Region, Landholdings, Variety of flowers planted and Awareness of the growers are tested with the above – said problems relating to flower grower's by using the well – known statistical tool of 'Chi – Square test'

Garrett's Ranking Technique

Garrett's Ranking Technique is used to rank the important problems faced by the small growers in flower plantation. The collected pieces of information from the respondents of small growers are arranged and converted into mean score values which are in turn ranked using Garrett's Ranking Technique.

Table 1.6

Irrigation and Problems Relating to Sapling and Seeds

Sl. No.	Problems faced by the flower growers	Results of X^2 Test	Table Value	Level of Significance	Results of H_o
1.	Sapling and seeds	16.62	> 9.49	5%	Rejected
2.	Agriculture loan by the banks	12.60	> 9.49	5%	Rejected
3.	Payment of flowers	1.35	< 9.49	5%	Accepted
4.	Cultivation of flowers	1.31	< 9.49	5%	Accepted
5.	Marketing of flowers	1.50	< 9.49	5%	Accepted
6.	Labour in flowers Cultivation	15.03	> 9.49	5%	Rejected
7.	Associated with the Dept. of Agriculture	11.50	> 9.49	5%	Rejected

Source: Field Survey

- 1. The calculated value is more than the table value. It implies that the hypothesis there is a significant relationship between irrigation and problems relating to saplings and seeds holds good. This confirms statistically that there is a significant relationship between irrigation and problems relating to saplings and seeds.
- 2. The calculated value is more than the table value. It implies that the hypothesis there is a significant relationship between irrigation and problems relating to agricultural loan does not hold good. This reveals statistically that there is no significant relation and problems relating to the agricultural loan.
- 3. The calculated value is less than the table value. It implies that the hypothesis there is a significant relationship between irrigation and problems relating to payment for flowers does not hold good. This reveals statistically that there is no significant relationship between irrigation and problems relating to payment for flowers.
- 4. The calculated value is less the table value. It implies that the hypothesis there is a significant relationship between irrigation and problems relating to the cultivation of flowers does not hold good. This confirms statistically that there is no significant relationship between irrigation and problems relating to the cultivation of flowers' does not hold good. This confirms statistically that there is no significant relationship between irrigation and problems relating to cultivation of flowers.
- 5. The calculated value is less than the table value. It implies that the hypothesis there is a significant relationship between irrigation and problems relating to the marketing of flowers does not hold good. This confirms statistically that there is no significant relationship between irrigation and problems relating to the marketing of flowers.
- 6. The calculated value is greater than the table value. It implies that the hypothesis there is a significant relationship between Irrigation and problems relating to labour' holds good. This confirms statistically that there is a significant relationship between irrigation and problems relating to labour.
- 7. The calculated value is greater than the table value. It implies that the hypothesis there is a significant relationship between irrigation and problems associated with Department of Agriculture holds good. This confirms statistically that there is a significant relationship between irrigation and problems associated with Department of Agriculture.

Table 1.7

Testing of Demographic Profile Flower Grower's of Correlation Co-efficient

Sl. No.	Factors	Correlation Co-efficient	Table Value 'r'	Results of 'r'
1.	Age	0.076	0.125	Not Significance
2.	Gender	0.216	0.125	Not Significance
3.	Marital Status	0.073	0.125	Not Significance
4.	Community	0.128	0.125	Significance
5.	Education	0.139	0.125	Significance
6.	Type of Family	0.024	0.125	Not Significance
7.	Size of the Family	0.161	0.125	Significance
8.	Landholdings	0.037	0.125	Not Significance
9.	Annual Income	0.007	0.125	Not Significance
10.	Indebtedness	0.018	0.125	Not Significance
11.	Timing of Sales	0.199	0.125	Significance
12.	Awareness	0.397	0.125	Significance

Source: Field Survey

- The testing of correlation was a significant relationship between the cultivation and marketing of flowers are community, education, size of the family, timing of sales and awareness of the flowers grower's in the Pudukkottai district.
- The testing of correlation is not significant relationship flowers growers such as age, gender, marital status, type of family, landholdings, annual income, and indebtedness of flower growers.

Table 1.8

Demographic Factors of Analysis of Variance (Cultivation and Marketing of Flower Grower's)

Sl. No.	Variables	Sources of Variation	Degrees of Freedom	Sum of Square	Mean Square	Result of 'F' test
1.	Age and Satisfaction	Between Groups	2	1968.60	984.30	9.651
		Within Groups	237	24170.79	101.99	
		Total	239	26139.39		
2.	Gender and Satisfaction	Between Groups	1	1220.15	1220.15	4
		Within Groups	238	24919.24	104.70	
		Total	239	26139.39		
3.	Marital Status and	Between Groups	1	115.71	115.71	1.058
	Satisfaction	Within Groups	238	6023.68	109.00	
		Total	239	6139.39		
4.	Community and	Between Groups	2	893.82	446.91	4.196
	Satisfaction	Within Groups	237	25242.57	106.52	
		Total	239	26139.39		
5.	Education and	Between Groups	2	837.77	418.89	3.924
	Satisfaction	Within Groups	237	25301.62	106.76	

		Total	239	26139.39		
6.	Type of Family and	Between Groups	1	14.92	14.92	0.136
	Satisfaction	Within Groups	238	26124.47	109.77	
		Total	239	26139.39		
7.	Size of Family and	Between Groups	2	683.74	341.87	3.183
	Satisfaction	Within Groups	237	25455.65	107.41	
		Total	239	26139.39		
8.	Size of Landholdings	Between Groups	2	320.53	160.27	1.471
	and Satisfaction	Within Groups	237	25818.86	108.94	
		Total	239	26139.39		
9.	Annual Income from	Between Groups	2	219.68	109.84	1.004
	Cultivation and	Within Groups	237	25919.71	109.37	
	Satisfaction	**Total**	239	26139.39		
10.	Timing of Sales and	Between Groups	1	510.20	510.20	4.738
	Satisfaction	Within Groups	238	25629.19	107.69	
		Total	239	26139.39		
11.	Indebtedness and	Between Groups	2	765.61	382.81	3.576
	Satisfaction	Within Groups	237	25373.78	107.06	

		Total	239	26139.39		
12.	Awareness and	Between Groups	1	1031.02	1031.02	9.77
	Satisfaction	Within Groups	238	25108.37	105.50	
		Total	239	25108.37		

Source: Field Survey

- Table 1.8 (Sl.No.1) reveals that the average satisfaction of each group is found to be statistically significant as the calculated value (9.65) is higher than the table value (3.03). As the difference in the averages of age between the groups is significant.
- It is observed from the table 1.8 (Sl.No.2) that the average satisfaction scores of the male and the female flowers growers are found to be statistically significant as the calculated value (11.65) is more than the table value (3.87).
- The average satisfaction scores of the two groups are found to be statistically not significant as the calculated value (1.06) is lower than the table value (3.87). The distribution of growers by marital status and satisfaction does not significant relationships.
- It is found that the average satisfaction scores of different groups are significant as the calculated value (4.20) is higher than the table value (3.03). Since the differences in the average are significant.
- Table 1.8 (Sl.No.5) reveals that the average – satisfaction score differences of the various levels of education is found to be statistically significant, as the calculated value (3.92) is higher than the table value
- Table 1.8 (Sl.No.6) indicates that the average satisfaction scores of two groups are found to be statistically not significant as the calculated value (0.14) is lower than the table value (3.87). The distribution of growers by type of family and satisfaction.
- Table 1.8 (Sl.No.7) reveals that the average satisfaction scores are found to be statistically significant as the calculated value (3.188) is higher than the table value (3.03) as the average differences between the groups are significant, critical difference value is also calculated.

- It could be observed from Table 1.8 (Sl.No.8) that the average satisfaction of medium growers is the highest. To analyze further whether the average- scores difference between the size landholdings is significant.
- It is observed from Table 1.8 (Sl.No.9) that the average satisfaction of each group is found to be statistically not significant as the calculated value (1.00) is less than the table value (3.03). The distribution of sample growers by the annual income from cultivation and satisfaction.
- Table 1.8 (Sl.No.10) reveals that the average satisfaction scores of the two categories are found to be statistically significant, as the calculated value (4.74) is more than the table value (3.87). The distribution of sample growers by timing of sales and satisfaction.
- Table 1.8 (Sl.No.11) reveals that the average satisfaction score of the various levels of indebtedness is found to be statistically significant as the calculated value (3.58) is higher than the table value (3.03). Therefore as the differences in the averages between the indebtedness groups are significant.
- Table 1.8 (Sl.No.12) is reveals that the average satisfaction score of the two categories are found to be statistically significant as the calculator value (9.77) is greater than the table value (3.87) the distribution of sample growers on the basic of awareness and satisfaction.

PERIOD OF THE STUDY

For the present study, primary data were collected during the period of Five years from 2010 to 2014.

FINDING AND SUGGESTIONS FOR IMPROVEMENT OF FLOWERS CULTIVATION

Twelve factors are identified and their influences satisfaction have been analysed. The influence of each factor has been tested with the help of correlation co – efficient. Among the factors tested. The following are the significant influences or satisfaction.

a. Gender
b. Community
c. Education
d. Size of the family
e. Timing of Sales

f. Awareness

The above statistical have proved that the following factors do not influence satisfaction.

a. Age

b. Marital Status

c. Type of family

d. Landholdings

e. Annual Income

f. Indebtedness

The study reveals that the satisfaction derived by the growers on flowers cultivation can be increased by imparting proper training related to various agricultural operations involved in flowers cultivation. This training aspect will surely increase their productivity which in turn would enhance their satisfaction level.

In the light of the findings made in the research study, the following suggestions are offered to improve the cultivation of flowers in Pudukkottai district.

Government of Tamilnadu should assist the flowers growers to establish the co-operative society for supplying the various inputs at the right price including seeds, fertilizer and pesticide at a subsidized rate and for providing marketing support to the growers.

The growers must be trained in modern techniques of flowers cultivation so as to reach higher productivity. The agriculture department of must devise methods and provide new tools to improve labour efficiency, resulting in the reduction of production – cost.

Good access to technical assistance, inputs, credit, transportation and marketing information are critical for ensuring that growers get the best possible productivity. The interaction between the department of agriculture and the growers must be improved. Growers should be encouraged to Visit department of agriculture to meet the officials concerned in order to get advice for their problems in cultivation.

One of the main problems that affect the production and productivity of flowers is the high incidence of the attack of insects and pests and the wide prevalence of diseases. Some kinds affect only the plants themselves while some other kinds affect only the fruit- bearing capacity of the plants and thus reduce their productivity. It is suggested' that the agriculture department of should come forward to provide necessary facilities, guidance and information for the growers for protecting their plants from insects and pests.

Organic cultivation is another method recommended for increasing per hectare income from flowers cultivation. There exists a high and increasing worldwide demand for organic products. Flowers produced without applying chemical fertilizers and pesticides fetches high prices in the world-market. An attempt in this regard would open new areas of operation for growers.

The central and state Governments should give enough incentives to the growers in the growers in their perspective development plan this is highly necessary in view of the fact flowers cultivation has to be labour intensive and the workers have to continuously paid increasing wage rates to raise their stand of living.

The cost of production of flowers is escalating steadily in almost all the regions of the district. Reduction in the cost of production is possible only yielding resistant varieties would go a long way in increasing the productivity of flowers.

Existing development agencies need to be technically updated by establishing a network of technology centers and opening a technical wing under the department of agriculture. This wing should have on-going and updating relationship with Universities, Colleges, Research and Development organizations in India and abroad.

Growers' awareness regarding the activities of the agricultural department related to flowers cultivation enables the small growers to understand the quality the quality of seeds, application of freezers and ecocides etc. are found to exercise much influence them regarding on their satisfaction. Therefore efforts should be taken to educate them regarding the activities of

agricultural department. This will enable the growers to understand the department is possible only by awareness.

Financial assistance especially agricultural loan facilities must be made available in time to the growers of flowers to encourage them to involve in effective cultivation.

Distress sale of flowers by growers is reported to be widely prevalent. Growers sell the output well in advance of the harvesting season at prices much lower than those prevailing in the market in order to tide over their financial difficulties with money lenders and commission agents. It is suggested that the financial assistance at moderate rate of interest to meet their financial requirements.

At the time of repayment of loan by the growers, the lending financial institutions should adopt a flexible approach in deciding the date of recovery of loan dues from the growers. By taking into account the time of harvesting and the nature of market. The lending institutions should adopt a flexible approach in collecting dues.The government of India need to design policies geared at making local markets work for growers. This involves creating strong, accountable and transparent regulatory bodies in this sector to provide marketing information and monitor competition among the supply chain. Moreover, technical assistance, better access to credit and inputs, investments in infrastructure and storge facilities are paramount to enable growers make a decent living and compete with others.The growers should come forward to pay wages higher than industrial operators and builders to avoid labour turnover. Emoluments and fringe benefits should also be given regularly to the workers in order to retain them in the cultivation.

CONCLUSION

India is the second largest producer of the flowers in the world. Tamilnadu gives more contribution in flowers cultivation. The study revealed that the area of flowers cultivation in Pudukkottai District of Tamilnadu remains constant throughout of the study period but there is a fluctuation in the cultivation of flowers. Considering the current scenario of the agri-industry, it has to maintain its comparative attractiveness like others in India to grow and develop as a major

industry. This would mean that the rewards to the growers should commensurate with the efforts required of them.

REFERENCES:

- 1. Agarwal, K.G., and D.D. Duhijod, (1997) "An Economic Analysis of Winter Floriculture Grown in Vicinityof Nagpur City of Maharashtra", Indian Journal of Agricultural Economics, Vol.52, No.3, July- September 1997, pp.622-623.
- 2. Anil Urs, (1997) "Tanflora Exports 1 mn cut Roses to Europe", Business Standard, 07.03.2007.
- 3. Desai, R.G., (2004) Economics of Floriculture, Himalaya Publishing House, Delhi, India, 2004, p.148.
- 4. Kalirajan, K.P., and et al., (1997) "Sources of output Growth in Indian Agriculture", Indian Journal of Agricultural Economics, Vol.52, No.4, October-December 1997, pp.689-692.
- 5. Thimmappa, K., and N. Mahesh, (2006) "Conservation Farming as an Alternative to Shifting Cultivation in Meghalaya - An Economic Evaluation" Indian Journal of Agricultural Economics, (2006) Vol.61, No. 3, July-September 2006, pp.304.

BOOKS

- Premsingh Arya and Santprakash,(2002) "flowersGrowing in India page No. 1& 2, kalyani publisher .New Delhi. 1st 2. kalyanipublisher.New Delhi 1st edition 2002
- Premsingh Arya(2002). "Flowers growing in Andhra Pradesh". Kalayani publishers 2002
- Singh B.B., Singh R.K.P and Yadav R.N (2001) "A study on Marketing of Chilies in district Begusarai, Bihar, Encyclopedia of Agricultural Marketing" Edited by languish Prasad Mittal Publication Vol. 7, 2001

REPORTS

- Survey of Indian Agriculture, The Hindu, Aug. 2012
- Times of India 07/02/2013
- Hand Book of Pudukkottai District 2011 – 2012
- Survey of Indian Agriculture The Hindu, Aug 2013