Original Research Article

Cultivation and Marketing of Important Flower Crops in Dindigul District of Tamil Nadu

ABSTRACT

Tamil Nadu is the leading producer of loose flowers in India. Dindigul is one of the major flower cultivation districts in Tamil Nadu. A flower crop survey was carried out in the Nilakottai Flower Market, Dindigul. There, much information was gathered from the farmer about the cultivation of flower crops in that area, including climatic conditions, yield, value-added products, and various pests and diseases to flower crops. Then, other details were collected from the commission agent and export agent in Nilakottai flower market regarding the marketing and exporting of flower crops grown and value-added products in that area to various districts of Tamil Nadu, states of India and various countries. Among various flower crops, jasmine is an attractive, important commercial crop and very popular in the state. It is significant in all religious, social, and cultural ceremonies, as well as all other functions performed by all people. Another notable jasmine cultivar grown in Madurai, Dindigul, Nilakottai, and surrounding areas has a Geographical Indication (GI) label. There are 10 jasmine-perfume-producing industries in Dindigul district. Various aromatic plants and flowers are used in the perfumery industry for scent production. In this article, various flower crops in Dindigul district and their cultivation and marketing have been presented.

Keywords: Floriculture, Jasmine, cultivation, marketing, Dindigul district.

1.INTRODUCTION

Floriculture or flower farming is the study of growing and marketing flower and foliage crops. Floriculture includes the cultivation of flowering and ornamental plants for direct sale or for use as raw materials in the cosmetic and perfume industries and in the pharmaceutical sector. Floriculture is an important sector of Indian agriculture, which produces more than the total amount of food grains in the country. The total production of floriculture is around 329.86 million metric tonnes (the highest ever), which is an increase of about 9.39 million metric tonnes (2.93%) over 2019–20 in the country. In 2020-21, the country exported 15,695.31 MT of floriculture products worth Rs. 575.98 crores (US$ 77.84 million) to the rest of the world.

Domestic demand for horticultural products is increasing in the country (Sivaramane et al. 2009), as are horticultural product exports, including flowers (Sudha, 2001; APEDA, 2014). However, efforts and investments should be directed toward the promotion of key dimensions governing sanitary and phytosanitary compliance along the export supply chain (Aarti et al., 2012). Floriculture is a vital sub-

sector of horticulture, having the potential to provide enhanced returns to farmers and employment opportunities, especially to small and marginal farmers and female labour (Kaviarasan *et al*., 2015). Flower crops require a lot of manpower to pick flowers and perform other operations, making them ideal for marginal and small farmers looking to increase their income, create jobs, and promote greater female labour force participation.

Presently, India is the second-largest producer of flowers after China. Tamil Nadu stands third in India in the area under flower cultivation (34,227 ha) as well as the production of loose flowers (4.29 lakh tonnes) in the year 2017–18 (Department of Horticulture and Plantation Crops, Tamil Nadu). Jasmine flower cultivation is very popular in Tamil Nadu and occupies more than two-fifths of the total flower area and production of 1.20 lakh MT in the state. Dindigul is a major flower crop producing district in Tamil Nadu (13958 MT). Although some of the issues of some flower cultivation have been studied (Guledagudda, 1996; Jyothi, and Raju, 2003; and Sivaramane, *et al*. 2008), the cultivation and marketing of jasmine and their constraints need urgent attention. Keeping in mind the importance of jasmine flower and other flower crops in Tamil Nadu, the study was undertaken to examine and identify the constraints to cultivation and marketing of flower crops in Dindigul district.

2. MATERIALS AND METHODS

2.1. Study Area

The current study was carried out in the Nilakottai flower market in the Dindigul district of Tamil Nadu, India. The area is located between latitude **10.36° N** and longitude **77.96° E** at an elevation of **265 m**. The temperature ranges between **23 and 37 °C**. The soils of the Dindigul region are mainly red, blackish brown, and reddish brown.

2.2. Data Collection

The field survey was conducted on July 17, 2021. The primary source of information was collected through the questionnaire and surveys conducted in Nilakottai Flower Market with farmers, commission agents, and exporting agents regarding the cultivation and marketing of flower crops in Nilakottai block of Dindigul district.

3. RESULTS

3.1. Cultivation of flower crops

S.NO	QUESTIONS	RESPONSES
1.	Numbers of farmers surveyed	**30**
2.	Educational Status	**10-12 th std**
3.	Farming Experience	**For generations**
4.	Crops grown	• **Jasmine Major trading flower crop- Average price: Rs. 500-5000/kg** • **Marigold – Average price –Rs. 50 – 300/kg** • **Tuberose- Average price – Rs. 80-160/ kg** • **Nerium- Average price- Rs.5-30/kg** • **Crossandra- Average price- 50-1500/kg** • **Mullai, Jaathi mullai- Average price- 500-2500/kg** **Rose – 250- 500/kg** • **Cut flowers- Cut rose, Gerbera, Cut chrysanthemum, Golden rod- Average price- Rs. 5- 10 / Flower**
5.	Average size of family	**5 members**
6.	Type of farmers	**Small scale farmers**
7.	Type of farming	**Irrigated farming**
8.	Water Source	**Wells and tanks**
9.	Transportation	**Own vehicle – by road**
10.	Constrains faced by farmers	**Wind, monsoon failure, water scarcity, inadequate fertilizers and pesticides, acidity of soil.**
11.	Preparation land for planting	**Cleaning, Tillage operation, Boundary demarcation, Pitting, Planting,Watering.**
12.	Source of vegetative material	**Vegetative Propogation**

13.	Methods of planting	**Cutting and Grafting**
14.	Corresponding growth of growth	**Good growth**
15.	Water management	**Irrigation has done through the pump**
16.	Knowledge about harvesting methods	**Hand picking, Harvest has done in morning and evening, Never lay flowers on the ground or dirty**
17.	Implements used for harvesting	**Knives and secateurs**
18.	Post harvesting activities	**Storage- done by farmers,** **Processing- done by farmers and commission agents** **Packaging- done by Commission agents and export agents**
19.	Fertilizer Application	**DAP- 20:20:20 and 17:17:17**
20.	Marketing	**Marketing has done through the commission agent in the Nilakottai district**
21.	Control of pests and diseases	**Captan and Indaxocarp**
22.	Flower crops and Cultivation	**Jasmine – Rs. 16000 per hectare and for Tuberose Rs. 60000 per hectare been given to farmers as back ended subsidy**
23.	Rotation	**Short rotation- 3 to 4 years**
24.	Plantation management activities	**Irrigation, Fetilization, Pesticide and insecticide application in the field**
25.	Indigenous/exotic species	**Indigenous crops**
26.	Need/capability for intensive management (Yes/No)	**Yes- Application of fertilizers, insecticides and pesticides has done by the farmers for high yield**
27.	Intercropping suggestions through previous farm experiences	**Perennial crops intercropping with annual flower crops**
28.	Prefers – Clonal Cuttings/Seed Originated/Others	**Cuttings and grafts**
29.	suggestions on – windbreaks/shelterbelts to agricultural field	**Some specified trees are used for windbreak**
30.	Yield expectations from species suggested (per	**8 – 10 tonnes / hectare**

	hectare)	
31.	Affordable pricing suggestions	**Pricing has decided based on the Season and availability of the flower crops**
32.	Number of perfume producing industries	**10**

3.1.1. Loose Flower Cultivation

CROPS GROWN	IRRIGATED / DRYLAND	YIELD(t/ha)	PRICE (Rs/kg)
Jasmine	Irrigated	8-10	500- 5000
Marigold	Irrigated	18	50 – 300
Tuberose	Irrigated	14-15	80- 160
Nerium	Irrigated	18	5- 30
Crossandra	Irrigated	2-3	50-1500
Mullai, Jaathi mullai	Irrigated	8	500-2500

3.1.2. Cut Flowers Cultivation

Cut flowers like cut roses, gerberas, cut chrysanthemums, and goldenrod are grown in Dindigul district; the average price is Rs. 5–10 per flower. Cut flowers are produced at Kodaikanal hill station in Dindigul district. The produced flowers are marketed in Nilakottai village in Dindigul district.

3.2. Marketing of Flower Crops

The flower crops produced in Dindigul districts are marketed through local farmers, wholesalers, retailers, and exporters.

3.2.1. Wholesalers

The marketing of flower crops has been done through various commission agents at Nilakottai Flower Market. In total, 43 commission shops are present in Nilakottai Flower Market in Dindigul district. In the flower market, whole-sale trading of flowers has been done for a long period of time. The wholesalers buy loose and cut flowers from the farmer and then sell those flowers whole to various markets and industries in Tamil Nadu. They can also procure flowers through contract farming between farmers and commission agents in that area. In this contract, the farmers received a loan for an advance amount for the cultivation of crops as a form of lending money. Farmers must provide a 10% commission

if they sell their flowers to the same commission agent. Farmers are not required to pay commission to agents after the contract is closed.

3.2.2. Retailers

The retailers are selling various flower crops like jasmine, pitchi tuberose, roses, marigolds, and chrysanthemums, which are all bought from the wholesalers. They have also made value-added products like garland and bouquets from flower crops like jasmine, rose, chrysanthemum, marigold, ocimum, davana, etc.,

3.2.3. Exporters

Exporters are exporting flower crops to various countries. Foreign exports are only done through this agency. Loose jasmine, pitch, nerium, marigolds, and flower garlands are the export materials. The flowers are exported mostly to Singapore, America, Canada, Dubai, etc., based on orders. Every day, 200–250 kg of flowers are exported to foreign countries. The exporting materials are obtained directly from farmers or wholesalers at the Nilakottai flower market. The flowers are usually packed in two kinds of boxes (large and small). 12 to 15 kg of flowers are accommodated in a box with 4 to 5 kg of ice. Large boxes are used for garlands; small boxes are for loose flowers such as jasmine, pitchi, jathi mullai, nerium, marigold, and so on. In big boxes, the flowers are arranged between two layers of garlands and three layers of ice. In small boxes, the flowers are arranged between three layers of ice and three layers of flowers. The export materials are transported to Trichy airport every day and then transported to foreign countries.

As Jasmine is considered as the important crop which possess Geographical Indication (GI) tag, marketing of Jasmine by various traders are mentioned below.

Market	**Number of Jasmine Growers**	**Percentage**
Village traders	193	36.42
Commission agent	75	14.15
Local market	216	40.75
Local shop	46	8.68
Total	530	100.00

4. SUMMARY AND CONCLUSION

The majority of flower crop growers are uneducated, and most of them are married. The majority of crop growers belong to the joint family. The majority of crop growers have many years of experience in

crop cultivation, and most of them use their own money for crop cultivation. Besides, the majority of crop growers market their flowers through local markets.

This study reveals that price, a lack of infrastructure (like water shortages and etc.), fraudulent practices, and a lack of export promotions are the major factors affecting the marketing of flower crops. The result of this survey indicates that price is a factor that positively and significantly influences the satisfaction of crop growers about marketing their crops, while lack of infrastructure, fraudulent practices, and lack of export promotions negatively and significantly influence the satisfaction of crop growers about marketing their crops.

In order to improve the crops' marketing, the government should formulate and implement appropriate marketing and pricing policies. The government should create adequate storage facilities for flower crops and take strong action against malpractices in the marketing of crops. The government and Export Promotion Council should disseminate and communicate market information and export opportunities to crop growers. In addition, the government should provide export facilities to crop growers in order to tap market potential across the border and get more returns. A proper marketing facility through a cooperative network will go a long way in bringing better returns to the crop cultivators. This calls for the revitalization of floriculture growers and other cooperative marketing and processing societies for crop cultivators' benefit.

5. REFERENCES

1. http://tnhorticulture.tn.gov.in/Flowers#:~:text=Tamil%20Nadu%20takes%20the%20third,bulbous%20flowers%20and%20cut%20flowers.
2. https://apeda.gov.in/apedawebsite/Annual_Reports/Apeda_Annual_Report_English_2014-15.pdf
3. https://vikaspedia.in/agriculture/farm-based-enterprises/floriculture#:~:text=Total%20area%20under%20floriculture%20in,dominate%20floriculture%20exports%20from%20India.
4. https://www.tnhorticulture.tn.gov.in/dindigul
5. Kaviarasan, K., Singh, D.R., Kumar, Anil and Arya, Prawin 2015. An Economic Analysis of Rose Production System in Tamil Nadu, biotech articles, accessed at http://www.biotecharticles.com/Agriculture-Article/An-Economic-Analysis-of-Rose-Production-System-in-Tamil-Nadu-3311.html
6. Sivaramane, N., Kumar, A., Singh, D.R. and Arya, P. 2008. An economic analysis of traditional and hi-tech Rose cultivation, *Journal of Ornamental Horticulture*, 11(1): 21-26.

7. Sivaramane, N., Singh, D.R. and Arya, Prawin 2009. An econometric analysis of household demand for major vegetables in India, *Indian Journal of Agricultural Marketing*, 23(1): 66-76.
8. Sudha, M. 2001. Economics of protected cultivation of cut-rose for international markets: role of price prediction models in intergrating production with marketing, *Agricultural Economics Research Review*, 14(1): 1-15.