JUST AGRICULTURE
multidisciplinary e-Newsletter

Production and Export Performance of Indian Floricultural Sector

N. Kumarasamy[1] and G. Harshavardhini[2]
[1]Associate Professor of Agribusiness Management,
[2]Assistant Professor of Agricultural Economics
PGP College of Agricultural Sciences, Namakkal-637405

ARTICLE ID: 032

Abstract

Floriculture as a commercial venture has become a hi-tech activity under controlled climatic conditions inside poly house or green house. India is on the 18th rank with contributing 0.6 per cent share in global floriculture trade. India has made significant improvement in the production of flowers, particularly cut flowers, which have good potential for export. The major flower growing states are comes under study to know their potential and weakness. Time series data covering a period of last two decades have been used for the study.

India's total export of floriculture was Rs. 575.98 Crores or 77.84 USD Millions in 2020-21. The export quantity showed a significant negative growth, value of exports showed positive significant growth which is important for economic growth. Among top fifteen importing countries, Singapore found to be the highest significant positive growth rate (14.18 per cent) with one per cent level in case of export quantity. Malaysia, Canada and United Arab Emirates shared the consecutive places with significant positive growth rate of 12.33 per cent, 11.34 per cent and 8.96 per cent respectively. United States, Australia, Italy, Netherland countries found to be negative and significant growth rate. The highest instability was found in the countries of Malaysia, New Zealand, Japan, and Singapore.

To enhance the globe trade in floricultural sector, efforts should be made by Government of India to increase the export of cut flowers. Storage facilities should be created and packing qualities should be insight to meet out the international quality norms. On technical collaborations from foreign companies, the Indian floriculture industry is poised to increase its share in world trade.

Key words: Compound Growth Rate, Instability Analysis & Indian floriculture, Production

JUST AGRICULTURE
multidisciplinary e-Newsletter

Introduction

Floriculture is the branch of horticulture that deals with the cultivation of flowering and ornamental plants for sales or for use as raw materials in cosmetic industry. Floriculture provides tremendous scope and opportunities and has become a major ingredient of modern lifestyle. There has been a transition in the floriculture industry as a commercial business venture with high market value and real opportunities. India is bestowed with several agro-climatic zones conducive for production of sensitive and delicate floriculture products. During the decade after liberalization floriculture industries took giant steps in the export arena. This era has seen a dynamic shift from sustenance production to commercial production.

In India, there are more than 300 export-oriented units. More than 50 per cent of the floriculture units are based in Karnataka, Andhra Pradesh and Tamil Nadu. The major importing countries were U S A, Netherland, United Arab Emirates, U K, and Germany. *(Source: www. http://apeda.gov.in/).*

The Government of India has introduced many developmental programmes mainly through the schemes of Ministry of Commerce (APEDA) and Ministry of Agriculture National Horticulture Board (NHB). Most of the state governments have also initiated their own programmes providing technical and financial assistance to the millions of small and large producers. NHB/Ministry of Agriculture has various schemes to promote this sector including a subsidy scheme for encouraging growth of new floriculture units.

Hence it is quite important to analyse the performance of Indian floriculture with a view to identify the potential and backward states in flower production and exports. Present study deals with the production and export performance of Indian floriculture sector with the objective: i) To find the Compound growth rate and instability in export quantity and value of floriculture products from India.

Data and Methodology

Data Used in the Study

The study is based on secondary data, year-wise covering the period from 2000-01 to 2020-21. The data on export quantity in MT and value in Rs. crore of Indian floriculture products, area and production of Indian flowers were collected from Agricultural and Processed Food Products Export Development Authority (**APEDA**), which is responsible

JUST AGRICULTURE
multidisciplinary e-Newsletter

for export promotion and development of floriculture in India.. For the year 2020-21, data collected were up to the month of April- March.

Tools of Analysis

This study used the following tools of analysis so as to present the results in a cogent manner and to draw meaningful conclusions.

Compound Growth Rate

The growth rate was calculated using CGR (Navalur *et al.*, 2016) in which the indicators used were export quantity, value, area and production of Indian flowers. The compound growth rate was calculated by fitting exponential function

$$Yt = ab^t$$

Where,

Yt= Variable for which the growth rate is calculated

t = Time Variable (1,2,...,n) for each period/year

a = Constant

b = (1 + r), and

r = Compound growth rate.

The log transformation of the above function is:

$$\ln Yt = \ln a + t \ln b + e_t$$

$$\ln b = \ln (1+r)$$

The compound growth rate in percentage (CGR) = [antilog (lnb)-1]x100.

The growth rates were tested for their significance by using the students't' test.

Instability Analysis

The coefficient of variation is generally used as a measure of instability.

$$CVt = CV\sqrt{1-R^2}$$

CV = Coefficient of variation ,

R^2 = Coefficient of determination of trend ,

CV = (Standard Deviation/ Mean) *100.

Results and Discussion

The Important floricultural crops in the international cut flower trade are rose, carnation, chrysanthemum, gladiolus, gypsophila, orchids, archilea, anthodium, tulip, and

JUST AGRICULTURE
multidisciplinary e-Newsletter

lilies. Floriculture crops like gerberas and carnation were grown in green or poly houses. Chrysanthemum, roses, gaillardia, lily marigold, aster, tuberose were cultivated under open field conditions.

Floricultural Production in India

Floriculture is an international, multi-billion dollar industry that includes the production of bedding and garden plants, foliage plants, potted flowering plants, cut flowers, cut cultivated greens, and floriculture materials. During the year 2018, the floricultural produce in India amounted to approximately 2.78 million metric tons. Tamil Nadu was the leading producer of flowers, aromatics and medicinal plants with over 428 thousand metric tons. The value of the floricultural exports from the south Asian country was estimated to be valued at 82 million U.S. dollar during the year 2019 *(Source: https://www.statista.com/)*.

As per National Horticulture Database published by National Horticulture Board, during 2019-20 the area under floriculture production in India was 305 thousand hectares with a production of 2301 thousand tonnes loose flowers and 762 thousand tonnes cut flowers. Floriculture is now commercially cultivated in several states with Andhra Pradesh (19.1 per cent), Tamil Nadu (16.6 per cent), Madhya Pradesh (11.9 per cent) having gone ahead of other producing states like Karnataka, West Bengal, Mizoram, Gujarat, Orissa, Jharkhand, Haryana, Assam and Chhattisgarh.

The states like Karnataka, West Bengal, Tamil Nadu, UP, Haryana had a medium to higher stability in which they can contribute more share in this sector. AP, Bihar, Jammu & Kashmir, Pondicherry are the states having less stability that should be concentrate more to increase their production level. States such as Sikkim, Manipur, and Meghalaya contributes very low shares.

Compound Growth Rate for Export Quantity and Value of Indian Flowers to Various Countries

Among top fifteen importing countries, Singapore found to be the highest significant positive growth rate (14.18 per cent) with one per cent level in case of export quantity. Malaysia, Canada and United Arab Emirates shared the consecutive places with significant positive growth rate of 12.33 per cent, 11.34 per cent and 8.96 per cent respectively. Whereas, the countries such as, United States, Australia, Italy, Netherland found to be

JUST AGRICULTURE
multidisciplinary e-Newsletter

negative and significant growth rate. The countries like Malaysia, New Zealand, Japan, and Singapore had high instability (Table 1.)

Table 1: Compound Growth Rate and Instability for Export Quantity of Indian Flowers to Various Countries {2000-01 to 2020-21 (April- March)}

S.No.	Country	Compound Growth Rate (in terms of quantity)	Instability
1.	United States	-5.20***	25.23
2.	Netherland	-4.63***	34.19
3.	United Kingdom	-2.01 ^{NS}	36.98
4.	Germany	-1.93 ^{NS}	46.10
5.	United Arab Emirates	8.96*	32.43
6.	Canada	11.34***	47.75
7.	Italy	-5.17***	39.23
8.	Singapore	14.18***	50.08
9.	Malaysia	12.33***	56.68
10.	Australia	-2.80**	45.35
11.	Japan	-1.73***	51.51
12.	Spain	0.22***	12.15
13.	New Zealand	1.28 ^{NS}	52.50
14.	Poland	0.66 ^{NS}	43.46
15.	China	0.79 ^{NS}	23.36

*Note: ***, ** and * denote significance at 1 %, 5 % and 10 % levels respectively.*

India's total export of floriculture was found to be Rs. 575.98 Crores/77.86 USD Millions in 2020-21, which showed an increasing trend when compared to previous year 2019-20. The country U.S.A shared a highest share of 27 per cent in 2020-21.(Table 2.)

Table 2. India's Export Trend in Floriculture Sector (2018-19 to 2020-21)

2018-19	2019-20	2020-21

JUST AGRICULTURE
multidisciplinary e-Newsletter

Qty in MT	Rs. Lakhs	US$ Mill	Qty in MT	Rs. Lakhs	US$ Mill	Qty in MT	Rs. Lakhs	US$ Mill
19,726.57	57,141.28	81.94	16,949.37	54,161.01	75.89	15,695.32	57,598.45	77.86

Source: DGCIS, APEDA.

Conclusions

Floriculture production and market is booming now-a-days due to increase in demand both in national and international market. In order to become sustainable, new strategies should be followed, which can give fruitful results on long-term basis. As the Indian economy is changing, the government of India should initiate the growth of cut flower industry. Efforts should be made by government of India to increase the export of cut flower. Storage facilities should be created and packing qualities should be insight to meet out the international quality norms. There are lot of opportunities hide in this emerging sector and hence creating awareness would bring the Indian economy to sunshine in the global trade.

References

Debajit Misra and Sudip Ghosh, 2016, Growth and export status of Indian floriculture: A review, *Agricultural Reviews*, 37(1): 77-80.

Pavithra, H. K., Gajanana, T. M. and Satishkumar, M., 2016, Production, changing pattern and trade directions of Indian exports in floriculture products, *Economics, Environment and Conservation journal*, 22: 47-53.

Raman, 2016, Analysis of growth trends in production and export of Indian cut flowers with special reference to contribution of Maharashtra, *International Journal of Multidisciplinary Research and Development*, 3(7): 71-75.

Suseela, K. and Chandrasekaran, M., 2016, Growth and Instability in Dryland Agriculture of Andhra Pradesh, *International Journal of AgriculturalScience and Research*, 6(2): 285-294.

Taj Uddin, M., Mohammad Kamal Hossain and Ohid Ullah, M., 2015, Growth and Instability in Area and Production of Pulse in Bangladesh, *Journal of Agricultural Science and Engineering*, 1(4): 163-167.