

Commercial Floriculture: Scope and Importance in India

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Introduction

Floriculture is a discipline of Horticulture and it includes cultivation of flowers and ornamental plants for selling or for use as an input materials in cosmetic industry as well as in the pharmaceutical sector. The present day floral industry is one of the most dynamic and fast growing industry, which has achieved significant rate of growth during the past few years and has extended worldwide with the major paradigm shift of production centers from developed to developing countries. India is also interested to emerge as an important production base for floriculture output.

Floriculture has become one of the important commercial trade in agriculture. Commercial floriculture has emerged as hi-tech activity-taking place under controlled climatic conditions inside greenhouse. At present the global ornamental crop industry is worth about US\$ 70 billion. The global consumption of the flowers is about US\$ 35 billion. Floriculture products mainly consist of cut flowers, pot plants, cut foliage, seeds bulbs, tubers, rooted cuttings and dried flowers or leaves. Commercial floriculture is becoming important from the export angle. The liberalization of industrial and trade policies paved the way for development of export oriented production of cut flowers.

Indian floriculture industry comprises of flowers such as Rose, Tuberose, Glads, Anthurium, Carnations, Marigold etc. Cultivation is undertaken in both open farm conditions as well as state-of-the-art poly and greenhouses. India's total export of floriculture was Rs. 460.75 crores in 2014-15. The major importing countries were United States, Netherlands, Germany, United Kingdom, United Arab Emirates, Japan and Canada. 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 technical collaborations from foreign companies, the Indian floriculture industry is poised to increase its share in world trade.

Commercial scope

It has been found that, commercial floriculture has higher potential per unit area than most of the field crops and is therefore a lucrative business. India's total export of floriculture was Rs. 460.75 crores in 2014-15. The major importing countries were United States, Netherlands, Germany, United Kingdom, United Arab Emirates, Japan and Canada. 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 technical collaborations from foreign companies, the Indian floriculture industry is poised to increase its share in world trade.

Floriculture is a fast emerging major venture in the world, especially as a potential money-spinner for many third-world countries.

In markets such as Delhi and Mumbai and other metros a single spike of gladiolus and gerbera flower may sell up to Rs. 3-5 in Kharif and Rs. 5-10/spike in Rabi/Summer.

Modern-day floriculture refers to the production of high-value cutflowers such as Rose, Gladiolus, Carnation, Orchids, Tuberose, Anthurium, Lilium, Gerbera etc.

The sales of loose flower of Jasmine, Crossandra, Marigold, China Aster, Chrysanthemums and Gaillardia etc., are a roaring business in south India.

The present trend in floriculture is for making dry flowers, extraction of natural colours and essential oils.

Employment Opportunities :

Floriculture generates self-employment opportunities round the year. The employment opportunities in this field are as varied as the nature of work itself:

1. One can join the floriculture field as farm/estate managers, plantation experts, supervisors and project coordinators etc.
2. Marketing of Floriculture products for different ventures is emerging as a potential segment of this field.
3. Besides one can work as consultant, landscape architect etc with proper training.
4. Research and teaching are some other avenues of employment in the field.
5. One can also work as entrepreneur and offer employment to others.
6. Floriculture also provides service career opportunities which include such jobs as floral designers, groundskeepers, landscape designers, architects and horticultural therapists.
7. Professional qualification combined with an inclination towards gardening and such other activities produces efficient floriculturists and landscaping professionals.
8. In addition to these careers which involve research and actual growing of crops.

Presently more than 145 countries are involved in flower production on commercial scale including India.

Apart from economic values floriculture has Aesthetic and Social values

Scopes In India

Although floriculture is flourishing in India, but it has not made any remarkable in the domestic and international markets due to various constraints. The country's share in the world total trade of fresh flowers is about 0.40 per cent to 0.50 per cent only as compared to Netherlands as much as 65, Columbia 12, Italy 6, Israel 4 and Kenya 1 %, and other countries share is about 20 per cent. The floriculture area in India is only 0.76 per cent. The investments in this field and per capita consumption of flowers are also considerably very low when compared to developed countries like Japan, USA and Western Europe.

Floriculture in India is being viewed as a high growth industry. Agricultural and Processed Food Products Export Development Authority (APEDA web port)-2016 shows that the Government of India has considered floriculture as a sunrise industry and accorded it 100% export promotion status.

As far as Indian floriculture is concerned, it can strengthen floriculture industry by improving the awareness, weak infrastructural support, quality planting material, post-harvest facilities, exploitation by brokers, sophisticated markets, database, and information on income generation and employment generation from different floriculture and export constraints. It is also viewed that a majority of the flower growers belong to small and marginal farmers' category, facing many constraint. The total area under flower crops in 2012-13 was 232.70 thousand hectares. Total area under floriculture in India is second largest in the world and only next to China.

Production and Types of Flowers

Floriculture production has been increased from 535,000 tons to 2,246,000 tons during the study period of 15 years and it is accounted for the Compound Annual Growth Rate (CAGR) of 11.1 per cent. The major traditional flowers grown are Marigold, Jasmine, Rose, Aster Crossandra and the cut-flowers with stem include Rose, Gladiolus, Tuberose and Carnation, hibiscus, China Aster, several annuals as Gonphera, Cocks, Comb, Golden Rod, Dahlia, Zinnia and Sunflowers

About 232.74 thousand hectares area was under Cultivation in floriculture in India. Production of flowers are estimated to be 1.729 million tonnes loose flowers and 76.73 million tonnes cut flowers in 2012-13.

The country has exported 22,947.23 MT of floriculture products to the world for the worth of Rs. 460.75 crores in 2014-15.

Major Flowers Grown in India



A rose is perennial flower shrub or vine of the genus *Rosa*, within the family Rosaceae, that contain over 1000 species and comes in a variety of colours. The species from a group of erect shrubs, climbing or trailing plants, its different types having flowers of exquisite shape, different sizes, bewitching colours and most delightful fragrance has made it an important flower for its varied uses.

Varieties of Roses

The following list gives some of the varieties of roses classified according to colour of the flowers :

Sr.No.	Colour	Varieties
1.	Red	Fly, Tea, Christian Dair, Gladiator, Papa-in eil land, Superstar
2.	Pink	First prize, Mischief, Soma
3.	White	John F. Kennedy, Dr. Homibhaba, Tushar
4.	Yellow	Landora Summer, Sunshine, Ganga
5.	Orange	Super star, Montezuma, Summer Holiday
6.	Blue	Blue moon, Lady 'X'
7.	Fragrant	Double delight, Papa mettland, My choice, Bluemoon

GERBERA
Scientific name: Gerberajamesonii



Gerbera, commonly known as Transvaal Daisy, Barberton Daisy or African Daisy, produces very attractive flowers. The genus Gerbera was named in honour of a German naturalist, Traugott Gerber. This is native to South African and Asiatic region.

The genus Gerbera consists of about 40 species of half-hardy, perennial flowering plants. Out of all the recorded species, only Gerberajamesonii is under cultivation.

Cultivar: Dusky, Fredaisy, Valentine, Vesta.



IRORA
Scientific name: *Ixora coccinea*

Ixora is a genus of flowering plants in the Rubiaceae family. It is commonly known as West Indian Jasmine. Other common names include: kheme, ponna, chann tanea, techi, pan, santan, jarum-jarum, Jungle flame, Jungle geranium. Members of *Ixora* prefer acidic soil, and are suitable choices for bonsai. It is also a popular choice for hedges in parts of South East Asia, like in Thailand. In tropical climates they flower year round.



JASMINE
Scientific name: *Jasminum* spp.

Jasminum commonly known as jasmies, is a of shrubs and vines in the olive family (Oleaceae). It contains around 200 species native to tropical and warm

Scientific name: *Cestrum nocturnum*



Cestrum nocturnum is a species of *Cestrum* in the plant family Solanaceae. This species is native to the West Indies. Common names include night-blooming cesrum, lady of the night, queen of the night, and night-blooming jasmine. It is grown in subtropical regions as an ornamental plant for its flowers that are heavily perfumed at night.

GARDENIA
Scientific name: *Gardenia jasminoides*



Gardenia is a genus of 142 species of flowering plants in the Rubiaceae family. *Gardenia* plants are prized for the strong sweet scent of their flowers, which can be very large in size in some species. Its fruits are used in traditional Chinese medicine for their clearing, calming, and cooling properties. *Gardenia jasminoides*, *Gardenia florida*, *Gardenia nana*, *Gardenia nivalis*, *Gardenia summiensis*, *Gardenia carinata*, *Gardenia fortunei*

It is a creeping vine. Also known as brommolata. It has sweet smell. Various in color e.g. pink, white



RANGOON CRIPER
Scientific name: *Quisqualis indica*

Herbaceous Perennials:

Herbaceous perennials are those perennial plants with soft succulent stems (as compared to shrubs which have woody stems). They are propagated by seed cuttings, off set and slips. They are useful as herbaceous or mixed borders or for pot culture.

The following are the examples for herbaceous perennials.

- Chrysanthemum:** Flowers are single or double available in attractive colours. Perennials species include C. Inutescens and C. maximum and its varieties. Propagated easily by suckers.
- Michaelmas Daisy:** *Aster amellus*, called also as perennial asters. Flowers are single wide white, rose, blue, lilac and purple colours. Easily propagated by division of the clumps and occasionally from seed. They are best in the cold and the rainy seasons.
- Solidago:** Popularly known - as golden rods producing erect feathery rod-like trusses crowded with pretty golden yellow flowers. They are suitable for mass planting in beds and borders in and adjoining lawn.
- Cerbera:** Stemless perennial herbs with radical stalked leaves, flower heads are solitary, large and sterile with varying colours. Propagation by divion of clumps or from seed. All the above four plants belong to the Family : Compositae

Some of the Important Bulbous Plants

- Amaryllis (Star lily):** 75-90 cm height. Flowers are trumpet shaped. The color of flowers varies from white to deep pink. Good for cut flowers.
- Arusaema (Snake lily):** Generally do well on the hills. The flowering spatha looks like cobra hood.
- Begonia (Elephants year) - The Rex begonias** are grown mainly for their large handsome ornamental leaves.
- Belamcanda chinensis (Leopard flower)** - 60-90 cm height. Grown all over India. The flowers are orange colored. Propagated by division. The spikes are used for table decoration.
- Caladium** - Widely grown for ornamental leaves. Deciduous. Can be grown in beds, pots and hanging baskets.
- Canna species** - Height 45-180 cm. This is a good plant for growing in beds in lawn. Propagated by division of rhizomes. Planting is done in June-July.
- Crinum asiaticum (Cape lily)** - Tall growing. The plants like swampy or marshy places. The flowers are produced profusely. Bears white flowers in umbels of 20 flowers.
- Eucharis Grandiflora (Amazon lily)** - Plants are dwarf (20-40 cm) White scented flowers are borne in an umbel over a long scape. Thrives better in plains.
- Gladiolus** - It is ideal for cut flowers. The planting time is between Sept. Oct. Flowers are of different colors.
- Gloriosa superb (Glory lily) j** - It is found growing wild. The flowers are long lasting. At opening, the color is primrose yellow and later turns orange-red.
- Haemanthus multiflorus (Football lily)** - 45-50 cm height. The inflorescence is football like with many flowers dense umbel, blood reds in color.
- Hymenocallis littoralis (Spider lily)** 30-60 cm tall, bears white fragrant flowers.
- Pollanthos tuberosa (Rajani Gandha)** - Produces white fragrant flowers on long spikes. Mostly for cut flowers.
- Siminiqu speciosa (Gloxinia)** - Bears bell shaped flowers (white, pink, blue) Best suited for growing in pots, windows boxes.
- Zantedeschia aethiops (Arum lily)** - Leaves are arrow shaped. The spathe is white creamy at base. Suitable for hills.
- Zephyranthes (Fairly lily)** - 15-20 cm height; grass like foliage and crocus

Some of the Common Succulents

- Aqave sisalana (Keti)** Mainly grown for extracting fibre.
- Aloeaculata** - Leaves fleshy, broad, lance late, bluish in color, flowers lemon yellow.
- Aptenia cordifolia** - Stems are covered with glistening papillae. Leaves heart shaped, flowers small purplish red. Useful for hanging baskets, rockery.
- Brophyllum (Kalanchoes)** - Leaves are fleshy, flowers are reddish. Planters develop at the tips of the leaves.
- Cotyledon barbidge** - Large fleshy shovel like leaves whitish green in colour.
- Euphorbia splendens (Crown of thorns)** - A shrub with spreading branches. Plant is full of grey spines and dark green leaves. Flowers round the year in terminal, clusters.
- Lithops (Flowering stones)** - Plants grow singly or in clumps. Plant bodies consist of single pair of brownish grey leaves. Flowers are white or yellow in color.
- Nolia recurvata** - Small tree with swollen trunk at the base and tapering upwards. Leaves are long narrow.
- Portulaca** - A shrub very common for hanging baskets.
- Sanseveria marginata** - Leaves thick green having yellow strip on margin.
- Sanseveria cylindrical:** Leaves round arching, measuring 120x50cm
- Sedum compactum** - Low growing with obovate to obtuse leaves.
- Yucca gloriosa (Spanish dagger)** - Not a succulent but is xerophytic plant. Grows about 240 cm in height. Stom thick short, topped by dense rosette of sword shaped leaves.
- Tradescantia navicularis (Chain plant)** - The overlapping fleshy leaves are arranged in two rows. Suitable for indoor cultivation.

Study of Important Flowering Annuals
 Annuals are a group of plants which attain full growth from seed, flower and die in one year or one season. Mostly they complete their life history in 3 to 6 months. They comprise of several of the most beautiful and easily grown plants widely varying in form, habit of growth and colour.

Uses of Annuals:
 Annuals find a variety of uses in landscaping:

1. Flower beds of simple design can be laid out on the outskirts of lawn, along the base of buildings, in the path leading to entrance of houses and on sides of footsteps.
2. Certain annuals are useful as edging e.g. Dwarf Marigold, Alyssum and Candytuft.
3. Certain annuals are useful in hanging baskets e.g. Petunia, Verbena and Alyssum.
4. Certain clinging annuals are useful to cover trellis work e.g. tall Nasturtium and Cobaea scandens.
5. Some annuals are useful for massing in beds e.g. Asters, Phlox, Salvia, Zinnia, and Verbena.
6. Few other annuals are useful for planting in shrubberies in vacant spaces; they are Sunflower, Holly hock, tall growing species of Amaranthus, Tithonia etc.
7. They serve as perennial sources of supply of cut flowers for indoor decorations.

Study of Important Flowering Biennials
Biennials:
 Biennials are plants which grow in one season, flower, fruit and die in the next season. Generally, the period of growth is 6 to 9 months. Biennials are grown in the same way as annuals and put to similar uses.
 Examples of biennials are Canterbury bulb, Scabiosa, Gladiolus etc.

Some Important Flowers For Commercial Floriculture

China Rose: Hibiscus Lotus: Nelumbo Floriculture Waterlily: Nymphaea

Roses Gladiolus Desert Rose Monkey Orchid

Golden Arch Monkey Orchid

Dendrobium Red Orchid Cymbidium Himalayan Lily

Crown Gardening Process Blue Rose

Poly house for Floriculture Pitunia

Thanks