

PROJECT PROFILE
ON
CUT FLOWERS

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CUT FLOWER PROJECT

INTRODUCTION:

India has a long tradition of floriculture. The offering and exchange of flowers on all social occasions, in places of worship and their use for adornment of hair by women and for home decoration have become an integral part of human living. Appreciation of the potential of commercial floriculture has resulted in the blossoming of this field into a viable agri-business option.

In most part of the country flower cultivation is carried out on small holdings, mainly as a part of the regular agriculture system. The estimated area under flower growing in the country is about 65,000 hectares. The major flower growing states are Karnataka, Tamil Nadu and Andhra Pradesh in the South, West Bengal in the East, Maharashtra in the West and Rajasthan, Delhi and Haryana in the North.

Cut flowers are usually sold in bunches or as bouquets with cut foliage. The production of cut flowers is specifically known as the cut flower industry. Cut flower with stems is used for bouquets and aesthetic arrangements with growing affluence and people's interest in using flowers as gifts. The major flowers in this category are rose, gladiolus, tuberose,

carnation, orchids, gerbera, chrysanthemum and gypsophila etc.

The main project is envisaged to create a beautiful cut flower commercial garden with picnic spot. Usually the flower beds if arranged systematically add to the beauty of the landscape. It is planned to use open spaces systematically for growing cut flowers but without the hampering of landscape beauty of the complex, which will be used for picnic. The concept planning will be to develop a cut flower garden on 12-14 beds of variable sizes totaling in a usable landmass of about 12000sq Mtrs out of 4 Acre (16000 Sq Mtrs). Rest of the land will be used to create a terraced garden landscape complete with a water body.

MARKET POTENTIAL

The production of flowers is estimated to be nearly 300,000 metric tonnes of loose flowers and over 500 million cut flowers with stem. In the case of production also, the estimates could be at variance from the actual figures as some of the flowers like rose, chrysanthemum, and tuberose are used both as loose flowers and with stem.

It is observed that India's exports of cut flowers is around 0.07 % of total world value exports to US (US \$ 634 million) while that to European Union(EU) is 0.42% of world exports to the

EU (€ 3.36 billion) in 2004. Rose imports in the EU account to 28 % of the total fresh cut flower imports and have the largest share. In view of the higher demand, consumption and premium prices with lower weight and thereby affordable freight, the exports of roses has higher prospects and is viable for developing countries like India.

Flower stalls dot every market and many street corners in India's big cities, selling loose stems or elaborate bouquets and set-piece presentation arrangements.

The amount of land dedicated to flower production in India jumped 55 per cent to 183,000 hectares in the five years to 2009/10, according to the National Horticulture Board.

Cut flower production rose to 6,667 million stems in 2009/10, from 2,071 million in 2004/05.

The large scale cultivation of cut flowers in poly houses and green houses *i.e.*, protected agriculture and soil less cultures such as hydroponics is catching up in India.

Globalization, free trade, opening world market has widened the scope of trade in Floriculture. Model floriculture centres (Karnataka and Maharashtra), floriculture Infrastructure park (Tamil Nadu) and farmers market especially for floral products

Sponsored by the Government of India and various State governments emphasize the strengthening of this sector. Paying attention to the input needs, better resource management and making various policies entrepreneur friendly would lead to a balanced growth of the industry.

TECHNICAL ASPECTS

Proposed Capacity

The proposed garden will have harvesting facility of about 9,87,000 cut flowers per annum. The mix of cut flowers at different capacity utilization per annum will be as follows

Product	1 st year produc tion	2 nd year producti on	3 rd year Producti on	4 th year producti on	5 th year production
Hybrid Rose (pcs)	210600	280800	351000	386100	351000
Anthurium(pcs)	Nil	43200	54000	75600	75600
Orchid(pcs)	72000	108000	126000	126000	108000
Jarbara(pcs)	183600	216000	237600	248400	270000
Carnation(pcs)	67500	94500	94500	94500	81000
Gladiolus(pcs)	56250	56250	56250	56250	56250
Total	589950	798750	919350	986850	941580

Type and Size of Various Flower Beds

Flower	Total bed Area in Mtrs	Type of Garden Proposed
Hybrid Rose	3000	Open farming
Anthurium	2000	Partially covered and controlled farming
Orchid	2000	Fully covered farming
Jarbara	1500	Partially covered
Carnation	1000	Fully covered farming
Gladiolus	2500	Open faming
Nursery & hardening Area	500	Covered and controled
Total	12500	

Tissue culture laboratory facilities

Activity	Area in Meters
Washing & Storage facilities of mother input	15
Media preparation facility	20
Culture isolation Section	20

Culture room and general facilities	15
Total	70

Transplantation facilities

In the form of a green house covering about 250 m² with humidity, temperature & light Control.

Green houses

Green house envisaged for the project will be basically shedding covers to safeguard the plants from excessive rains as well as in few cases from excessive sun. The green house sheds will be constructed using bamboo and sal wood for prop-up and trusses. The top cover will be made by using double ultraviolet stabilized poly films and/or shading net. The green house will be having mobile misting/fogging and evaporated cooling system. The houses will also be provided with movable benches. Total green house covered area considered is 5250 square meters.

Garden mechanism and control equipment

Following facilities are envisaged for the cut-flower garden:
Drip – irrigation system with liquid fertilizer mixture complete with pumps filters and water treatment plant. Soil preparation

equipment both manual and semi-mechanized consisting of moling, subsoiler, discharrow, ploughs, caulters etc.

Crop establishment equipment consisting of centrifugal drill, plant raising blocking machine and transplanting machine, building machine for rose garden.

The total cost of equipments, electricals for farm, and other transport vehicles is estimated at Rs.60.00 lakhs

First time various plantlets to be procured from external sources.

Type of plantlet	Total nos of first time plantlets @ 90% of bed area
Hybrid Rose	18500
Anthuriam	11400
Orchid	19000
Jarbara	11400
Carnation	14250
Gladiolus	59200
Total	133750

Flower Transport Facility

For transporting the cut flowers to the nearest cities and to keep the cut flowers fresh it is envisaged to provide a refrigerated van for the purpose of transporting cut flowers from the garden to airport s/ market.

Input annual requirement

The Value of Various materials requirement for harvesting above-mentioned quantity of cut flowers will be as follows:

	1st Year	2nd
	Rs.lakhs	Year- Rs lakhs
Seeds for nursery	0.02	0.02
Tissue culture and chemicals cost	0.23	0.25
Input material	0.25	0.27
Glass ware cost	0.08	0.09
Transplant cost	0.07	0.07
Fertiliser cost	0.25	0.28
Insecticides	0.13	0.14
Hard wire	0.13	0.14
Ploy sheet	0.04	0.04
Consumables	0.70	0.76
Diesel required	0.24	0.26
	1.19	1.29

Land requirement

Total land required will be 4 acres or 16000 Sq.m

Building and civil work

Total building including tissue culture laboratory and office is envisaged at 285 sq mt

Power requirement

Total connected load of about 45 KW will be required. Due to present short supply of power a DG set back up of 15 KW is also envisaged.

Water Requirement

About 6-7 KL of water will be required every working day.

Employment

21 persons of different category as per following table:

		Monthly wages	Total
Manager	1	10000	10000
Technical Manager	1	9000	9000
Scientist & Horticulturist	2	9000	18000
Supervisor	3	9000	27000
Skilled	3	7000	21000
Helpers	9	5000	45000
Assistants	2	6000	12000
sub total			142000
Add benefits		20%	28400
Total per month			170400
TOTAL PER ANNUM-Rs. lakhs			20.45

ROSES

Rose is the principal cut flower grown all over the country. For cut flower use, rose varieties like Queen Elizabeth, Super Star,

Christian Dior, Eiffel Tower, Kiss of Fire, Golden Giant, First Prize etc. are popular.

Roses are grown in cold climate of the hills as well as in the plains of northern and southern regions.

Well-drained, medium loam soil having a pH of 6.0 -7.5 is ideal for rose growing. The plants do not thrive in saline sodic soils. The requirement of planting material is largely met from domestic production, breeding centres and private nurseries. Most of the nurseries are small, with little or no improved facilities like mist propagation unit, green houses /net houses, etc. Roses require full sunlight or light at least for 6 hours preferably in the forenoon. It should be planted in pits of 60 cm diameter and 60-75 cm depth dug at appropriate distances in abed. A closer planting distance of 30 X 60 cm is ideal for obtaining cut flowers. Rose bushes are pruned once a year during second or third week of October. After about 6-7 weeks of pruning requires regular nutrient feeding through manures and fertilizers at the time of pruning, plant growth and at the end of flowering.

Pruning

Foliar application of micronutrients, eg, iron, magnesium and manganese coorrects the deficiency of these elements. Major pests attacking rose are red spider mite and stem borer. Mites suck the underside of leaf. Stem borer wasp drills 5 cm deep

hole into stem to lay eggs. As control during the growing season, spray insecticidal formulation mixed with pyrethrin.

Pest and Diseases

Common diseases found are powdery mildew and botrytis. Preventive and curative spraying is essential.

Mildew always starts on the upper leaves and surround the peduncle. To treat powdery mildew, this homemade remedy can be tried. 1 tea spoon of baking soda, 1/2 teaspoon oil and one quart bottle. Sulfur dusts will also control powdery mildew.

In botrytis large soft petalled blooms rot from the inside instead of developing and opening. Apply micronized sulfur to prevent further damage, and provide plenty of air circulation.

Rose flowers are cut while still in the bud stage after the sepals curl back and the colour is fully shown. In large-flowered roses, flowers along with the stem of prescribed length are cut when the first one or two petals start in small-flowered clustered varieties are cut when these begin to open in the cluster.

The size of stem varies from 60– flowered ones depending upon the grade. The flowers harvested in early morning or late in the afternoon are kept in plastic buckets/containers filled with clean water having disinfectant and preservative like silver thiosulphate to enhance shelf-life.

Harvested flowers are shifted to pre-cooling chambers having a temperature of 10 O C for about 12hr. The flowers are graded for their stem length, quality and variety. The defective, damaged or bruised flowers are rejected. The graded flowers are bunched with 10 or 20 stems in each bunch and sleeved with thick paper or plastic film. These flowers are then packed in telescopic corrugated cardboard boxes of specified dimensions. The flower boxes are kept in cold storage at 2-4 0c temperature for 12-24 hr. The flower boxes are then transported in refrigerated trucks.

Post-Harvesting

In most metropolitan cities, with 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. The retail florist shops usually operate in the open on-road sides, with different flowers arranged in large buckets. In the metros, there are some good florist show rooms, where flowers are kept in controlled temperature conditions, with considerable attention to value added service.

The flowers, depending on the kind, are packed in old gunny bags, bamboo baskets, and simple cartons 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.

Cut flowers

Technology suppliers

1. Tamil Nadu Agricultural University

Coimbatore - 641 003

Ph: 0422-6611383, Fax: 0422-2450595

E-Mail: info@tnau.ac.in

FINANCIAL ASPECTS

1. COST OF PROJECT

	[Rs.lakhs]
Land	20.00
Building	30.00
Plant & Machinery	60.00
Other Misc. assets	2.00
Pre-Operative expenses	5.00
Margin for WC	2.00
	<u>119.00</u>

2. MEANS OF FINANCE

Capital	35.00
Term Loan	84.00
	<u>119.00</u>

3. COST OF PRODUCTION & PROFITABILITY STATEMENT

	[Rs.lakhs]				
Years	1	2	3	4	5
Installed Capacity	987000	987000	987000	987000	987000
Utilisation	60%	81%	93%	100%	95%
Production/Sales Gross	589950	798750	919350	986850	941850
Selling Price	Rs.8.00	per piece			
Sales Value (Rs.lakhs)	47.20	63.90	73.55	78.95	75.35
Input materials	0.25	0.27	0.27	0.27	0.27
Consumables	0.70	0.76	0.76	0.76	0.76
Fuel	0.24	0.26	0.26	0.26	0.26
Power	0.79	1.07	1.23	1.32	1.26

Wages & Salaries	20.45	20.86	21.27	21.70	22.13
Repairs & Maintenance	0.30	0.33	0.36	0.40	0.44
Depreciation	12.00	10.35	8.93	7.71	6.67
Cost of Production	34.73	33.90	33.09	32.42	31.79
Selling, Admin, & General exp	1.80	1.89	1.98	2.08	2.18
Interest on Term Loan	10.92	9.56	6.83	6.83	6.83
Interest on Working Capital	0.22	0.22	0.22	0.22	0.22
Total	47.67	45.57	42.12	41.55	41.02
Profit Before Tax	-0.47	18.33	31.43	37.40	34.33
Provision for tax	0.00	6.23	10.69	12.71	11.67
Profit After Tax	-0.47	12.10	20.74	24.69	22.66
Add: Depreciation	12.00	10.35	8.93	7.71	6.67
Cash Accruals	11.53	22.45	29.68	32.40	29.33
Repayment of Term Loan	0.00	21.00	21.00	21.00	21.00

4. WORKING CAPITAL:

	Months	Values	%	Margin Amount	Bank Finance
Raw Materials	6.00	0.13	25%	0.03	0.10
Expenses	1.00	2.00	25%	0.50	1.50
		2.13		0.53	1.60

5 PROFITABILITY RATIOS BASED ON 80% UTILISATION

$$\frac{\text{Profit after Tax}}{\text{Sales}} = \frac{20.74}{73.55} \quad 28\%$$

$$\frac{\text{Profit before Interest and Tax}}{\text{Total Investment}} = \frac{38.48}{120.60} \quad 32\%$$

$$\frac{\text{Profit after Tax}}{\text{Promoters Capital}} = \frac{20.74}{35.00} \quad 59\%$$

6. BREAK EVEN LEVEL

Fixed Cost
(FC):

	[Rs.lakhs]
Wages & Salaries	21.27
Repairs & Maintenance	0.36
Depreciation	8.93
Admin. & General expenses	1.98
Interest on TL	6.83
	<u>39.38</u>

Profit Before Tax (P) 31.43

$$\text{BEL} = \frac{\text{FC} \times 100}{\text{FC} + \text{P}} = \frac{39.38}{70.81} \times \frac{93}{100} \times 100$$

52% of installed capacity