

Floriculture in Pakistan



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Summary

Change in life style of people has increased the demand for the cut flowers products especially in the developed and developing countries for the past two decades. This increase in demand of cut flowers is due to increasing use of cut flowers for different ceremonies in the society like weddings and birthday parties etc. High-quality flowers are vastly in demand.

Global Flower trade is increasing every year. Growing flowers and selling them in the international market is at the moment a huge industry with billion of sales and employ millions of people worldwide. However to support this International Industry and earn foreign exchange, it is necessary to promote floriculture in Pakistan.

This study is focused on production of four varieties of flowers i.e. Chrysanthemum, Gladiolus, Statice and Mari Gold cultivated on area of 50 acres. The report covers the characteristics of varieties and production technology starting from land preparation, fertilization, irrigation, plant care, harvesting and preservation.

The floriculture farm on an area of 50 acres needs a capital investment estimated at Rs.3.39 million for construction, purchasing machinery and equipment. In addition to this, a sum of Rs. 5.3 million is required as working capital, which would be used for purchasing of seeds, fertilizers and pesticides etc. The total project cost is estimated at Rs.8.7 million. The estimated income varies from Rs. 8.8 to 16 million per annum from first to tenth year of the project. The main reason of high profit margins in this project is that heavy investments on machinery or construction are not required. This is a profitable business enterprise due to continuous increasing demand of the flowers in the international.

1. Introduction

Horticulture is a science and art of gardening and of cultivating fruits, vegetables, flowers, and ornamental plants. Floriculture or flower farming is a discipline of horticulture that deals with the development, cultivation and marketing of flowering plants. Cut flower business deals with the growing of flowering plants and marketing of flowers cut along with some stem and leaf. These cut flowers are usually used for indoor decoration. Live cut flowers have a limited life. The majority of cut flowers can be expected to keep alive for several days with proper care. This generally requires standing them in water in shade. They can be treated in various ways to increase their life. To keep cut flowers beautiful and longer, cut stems should be placed in water immediately, as air will rapidly move into the water-conducting tissues and plug the cells that will cause early wilting of flower.

Change in life style of people has increased the demand for the cut flowers products especially in the developed and developing countries for the past two decades. This increase in demand of cut flowers is due to increasing use of cut flowers for different ceremonies in the society like weddings and birthday parties etc. High-quality flowers are vastly in demand.

The favourable climate provides added benefits for investment in the floriculture sector. The return on floriculture crops is much higher than the other agricultural crops. Cut flower demand fluctuates during the year depending upon various social functions whereas supply of cut flowers fluctuates due to seasonal effects of weather.

2. Project Cost

This project is focused on production of four flowers varieties only i.e. Chrysanthemum, Gladiolus, Statice and Mari Gold cultivated on area of 50 acres. The land utilized for cultivation is recommended to be leased.

The production of flowers on area of 50 acres needs a capital investment estimated at Rs. 3.39 million for construction, purchasing of machinery and equipments. In addition to this, a sum of Rs. 5.3 million is required as working capital, which would be used for purchasing of seeds and fertilizers etc. The total project cost is estimated at Rs. 8.69 million.

3. Export Prospects

Global Flower trade these days is in excess of US \$ 5 billion and increasing every year. In recent years, China, India, Kenya, Columbia and Israel have done exceedingly well in this field and are among the leading exporters now. The flower trade worldwide is changing very rapidly; many more flowers are needed year round for the fast developing impulse sales in the mass-market. These will have to be produced under the most competitive conditions. Many countries are getting into cut flower production both for domestic consumption and for

export. Each country has its own particular climate which growers have to utilize to develop their specialties. Each country also has its own limitations in the form of logistics, which can dictate where the flowers are sold.

Looking to the international situation in the flora culture industry, Holland is market leader with about 65% of the total sales of flowers and plants. Not only that but Holland is also market leader by supplying all kind of young plants material, seed, equipment and they have a very high standard and they are updated with the latest trends and techniques. Holland is also the middle point of the daily market in selling flowers and plants. The two big auctions "Aalsmeer" and "Flora Holland" which are operating five days a week, play a major role in the international selling of flowers and plants and what Wall street in New York is for the International Financial World that are these two auctions for the Flora Industry.

On those auctions the daily world market prices are settled and in a few minutes people all around the world can follow this by high communication systems and latest techniques. Last 40 years Holland created a big Flora Culture Industry and now the day more than 100 countries are sending their flowers and plants to this market and from there wholesalers send them to customers all over the globe. Those wholesalers are able to supply each customer with wide range of products. About every day millions of different flowers and plants in all kind of colours are available for the International Buyers and all according the International Standards which took about 40 years to develop and at the moment everybody in the world are following this International Standards.

These International Standards are providing customers all over the world with a guaranteed fresh product with a long vase of life. By modern cooling systems and logistics systems people all over the world, order in the morning and the same day or early morning next day your flowers and plants are arriving fresh and healthy.

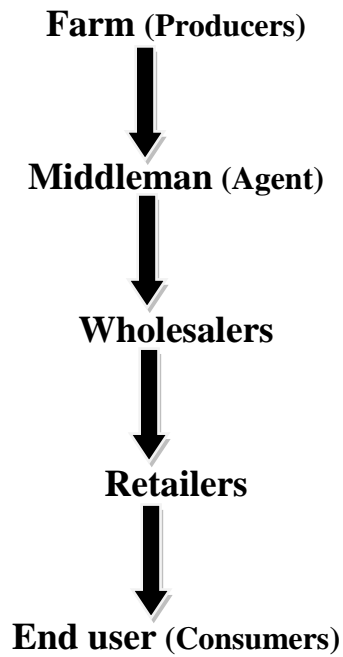
Growing flowers and selling them in the international market is at the moment a huge industry with billion of sales and employ millions of people worldwide. However to support this International Industry it is necessary to have open Trade Borders and the closing down of Trade Barriers.

Looking to all of this, in Pakistan not much emphasis has been given to this lucrative business in the past. Recently, Pakistan Horticulture Development & Export Company (PHDEC) has taken the initiative to promote this important area of Horticulture with the objective of making Floriculture exports as one of the sunshine sectors of the country.

Cultivation under controlled environment of Green houses is recommended to overcome the weather conditions and to provide most suitable growing environment for top quality and high yield. Green House cultivation is an expensive medium and can be out of reach of individual farmers.

4. Marketing Channels

The price of cut flowers depends upon the quantity, quality, and variety of the flowers. It is determined by the wholesaler and retailers. The marketing channel of cut flowers is as follows:



5. *Chrysanthemum*

Chrysanthemum comes from Greek 'Chrys' meaning golden (the colour of the original flowers), and 'anthemon', meaning flower. It is one of the most popular flowers in the world after rose. Each Chrysanthemum flower head is actually a cluster of many flowers, composed of a central group of short disk flowers surrounded by rings of longer ray flowers.



i. Characteristic

- Chrysanthemums are tropical flowers.
- It belongs to the Asteraceae (Compositae) family, which is one of the largest families of flowering plants with over 1,000 genera and about 20,000 species.
- Chrysanthemum flavoured tea is very popular and is used as a relaxant.

ii. Growing of Chrysanthemums

- Chrysanthemums are not specific to any season.
- Chrysanthemum plants can be grown in any kind of soil, but they require a sunny weather for best performance. Chrysanthemum seeds are sown in those areas which experience low rainfall during the rainy season.
- Chrysanthemums are easy to be grown and are propagated by division of roots, cuttings and seeds. Usually, the Chrysanthemum seedlings are transplanted after about a month of sowing. But sometimes seeds can also be sown directly in situ and seedlings thinned out after germination.
- Chrysanthemum plants flower in about three months of sowing. Chrysanthemums have a long flowering period.

iii. Varieties

Chrysanthemum flowers bloom in various forms, and can be daisy-like, decorative, pompons or buttons. Chrysanthemum blooms come in a huge variety of shapes and sizes. They come in wide range of colours e.g. yellow, white, purple, and red. They are very popular in floral bouquets and flower arrangements e.g. Corn Marigold or Corndaisy, Tricolor Daisy, Crown Daisy, Shasta Daisy, Alecost.

iv. Plant Care

- After the transplants, the Chrysanthemum beds should be weeded, hoed and watered regularly.
- In some cases staking of Chrysanthemum plants is necessary.
- After a few weeks, the Chrysanthemum seedlings are pinched to make them bushy.
- Fertilizing the plant is an important step in caring for chrysanthemums. Fertilize when the plants are ready for blooming and discontinue fertilizing after flower buds are formed.
- A careful check should be made to detect diseases or insect/pests and prompt control measures should be adopted to control them.
- The faded Chrysanthemum blooms should be removed regularly as it helps prolong flowering.
- Chrysanthemums are susceptible to aphids and plant bugs, leaf spot and stunt, and foliar nematodes. However, Chrysanthemums benefit from winter protection.

6. Marigold

Marigolds come in different colours, yellow and orange being the most common. Most of the marigolds have strong, pungent odour and have has great value in cosmetic treatment. There are many varieties of Marigolds available today. Broadly, there are two genuses which are referred to by the common name, Marigolds viz., Tagetes and Celandula. Tagetes includes African Marigolds and French Marigolds. Calendula includes Pot Marigolds.



i. Characteristic

- It is an extremely effective herb for the treatment of skin problems and can be used wherever there is inflammation of the skin, whether due to infection or physical damage.
- As an ointment, Marigold (Calendula) is an excellent cosmetic remedy for repairing minor damage to the skin such as subdermal broken capillaries or sunburn. The sap from the stem is reputed to remove warts, corns and calluses.
- In South Asia bright yellow and orange Marigold flowers are used in their thousands in garlands and to decorate religious statues and buildings. They are also used as offerings and decoration at funerals, weddings and other ceremonies.
- Pigments in Marigolds are sometimes extracted and used as a food colouring for humans and livestock.

ii. Growing of Marigolds

Marigolds can be propagated by seeds. The plants need about 45 days to flower after seeding. Marigold seeds should be sown 2cm apart. Cover seeds with 1/4 inch of potting soil. Water

sufficiently. Plants will appear within a few days. When true leaves have formed, transplant into individual containers or outdoors.

- Plant your seeds in half-sunny or sunny locations.
- The soil must be well-drained, moist and fertile.
- Add potash fertilizers to prolong the flowering period.
- Pinch off the first flowers before they open. This will lead to a larger number of flowers.

iii. Varieties

Marigolds come in different colours, yellow and orange being the most common. Most of the marigolds have some odor and has great value in cosmetic treatment. There are many varieties of Marigolds available today. Some of the major Marigold varieties are African or American Marigolds, French Marigolds, Signet Marigolds.

iv. Plant Care

Marigolds have a pungent odour which keeps insects at bay, but they can be bothered by slugs. Also, tall American and Triploid Marigold varieties need staking to protect them from strong winds and heavy rainfall.

7. *Statice*

Statice Flower is a perennial Exotic Flower, which belongs to the family Plumbaginaceae. Statice flowers are popularly used in dried flower arrangements, indeed Statice are one of the most widely used dried flowers. Statice is also commonly known by various different names viz., Limonium, English Statice, German Statice, Seafoam Statice, Latifolia, Sea Lavender.



i. Characteristic

- The name of the genus, Limonium is an ancient Greek name, derived from the word meadow, referring to the plant's original habitat. Other names used for various Statice species include Misty, Latifolia, Sea Foam and Caspia.
- Statice flowers are used extensively for border, bed, cut flowers and dried arrangements.
- Hybrids between Limonium latifolium (Sea Lavender) and Limonium bellidifolium (Caspia Statice) include Saint Pierre, Beltlaard and the Misty series. They retain much of the airy nature of Caspia Statice, and also Fantasia.
- In some varieties of Statice, the flowers are initially just violet when they are first formed, but later on as the flowers mature some of them, in the middle of the bunch, change color and become pure white.

ii. Growing of Statice

Statice is easy to grow and salt tolerant. Statice Seeds can be initiated indoors 6-8 weeks before planting or sown directly outdoors. Division may be done in early to late spring or root cuttings can be taken in mid-winter and grown indoors or in a cold frame until spring.

- Plant in full sun in well drained soil.
- Statice prefers sandy soil types.
- Statice is fairly drought tolerant.
- Statice Seed can be planted directly in the ground after frost has passed.
- Once established, plants can be divided in spring.

iii. Varieties

Some species of Statice have an offensive odor. English Statice comes in 1- to 2-inch clusters of Calyxes, each about 1 inch across. Stems are 1 to 1 feet long. The German Statice's small gray bracts arch backward, while the English Statice feature calyxes that are yellow, white, purple, lavender or pink with tiny white or yellow flowers inside. Latifolia Calyxes are white with blueviolet flowers. Statice Flowers can be spray dried with a fixative.

iv. Plant Care

- Statice is easily grown in full sun and in well drained average to sandy soil.
- Statice is a low maintenance plant.
- The plant benefits from a light fertilizer in early spring.
- Potential pests or diseases are rare.

8. *Gladiolus*

Gladiolus is also commonly referred to by the name of its genus - Gladiolus, the plural form of which can be Gladiole, Gladioluses or Gladioli. Gladiolus is also known as the Sword Lily, due to its sword shaped leaves, or Corn Lily. The genus Gladiolus comprises 260 species, 250 of which are native to sub-Saharan Africa, mostly South Africa. About 10 species are native to Eurasia. The impressive flower spikes of Gladioli come in a wide array of beautiful colours.



i. Characteristic

- Gladiolus bulbs are not true bulbs. Gladiolus bulbs, in botanical terminology, are referred to as corms. A corm is a shortened and thickened section of the stem that appears at the base of the plant. On the corm are buds for each layer of leaves. Except for production of new varieties, Gladioli are not cultivated from seed.
- Gladiolus plants are attractive, perennial herbs and semihardy in temperate climates. They grow from rounded, symmetrical corms that are enveloped in several layers of brownish, fibrous tunics.
- The fragrant Gladiolus flower spikes are large and one-sided, with secund, bisexual flowers.
- Each Gladiolus flower is subtended by 2 leathery, green bracts. The sepals and the petals are almost identical in appearance, and are termed tepals. They are united at their base into a tube-shaped structure. The dorsal tepal is the largest, arching over the three stamens.
- The outer three tepals of the Gladiolus are narrower. The Gladiolus perianth is funnel-shaped, with the stamens attached to its base. The Gladiolus style has three filiform, spoon-shaped branches, each expanding towards the apex.

ii. Growing of Gladiolus

Gladiolus can be propagated by dividing rhizomes, tubers, corms or bulbs (including offsets).

- Plant Gladiolus as early in the spring as the soil is fit to work.
- Gladiolus corms can readily be purchased at your local garden center or nursery, though they can easily be grown from seed.
- Sow the seeds in early spring, in a well-drained flat 8 to 10 inches deep, that is filled with two thirds loam and one third leaf mold or peat moss, with a good amount of sand added.
- Plant the seeds an inch apart and cover with about 1/4-inch of the soil. If the soil is kept fairly moist, the seeds should sprout in a few weeks.
- Set the container of seedlings outside in a fairly sunny location during the summer months and don't disturb until the leaves have died down in the fall.
- At this time, take out the small corms, store for the winter, and plant in a border in March about 3 inches apart.
- The blooming season can be stretched by making succession plantings, by planting bulbs of several sizes, and by using varieties which take different lengths of time to mature.

iii. Varieties

Gladiolus is found in a variety of types that include both the species and hybrid glads. The different types of species represent the geographic and ecological range of the many species in this genus. The different combination of species used to create the different hybrids has led to the establishment of several different types of hybrids as well.

iv. Plant Care

- Apply a 2 to 4 inch layer of mulch around gladiolus to retain moisture and control weeds.
- Water plants during the summer if rainfall is less than 1 inch per week.
- Remove individual flowers as they fade, and cut back flower stalks once all flowers have gone by.
- Leave foliage intact to mature and rejuvenate the corm for next year.
- Mulch beds with a layer of hay or straw for winter protection.
- Remove excess soil, cut the stalks to within an inch of the corms, and let them cure for 1 to 2 weeks in a warm, airy location.
- Then remove and discard the oldest bottom corms and store the large, new corms in plastic mesh bags in a well-ventilated, 35 to 45 degree F room. Replant in spring.

v. Gladiolus Bulb Care

Gladiole suffer when forced to compete with weeds.

- Remove the weeds.
- The new corm and the new roots are formed on top of the old one during the growing season.
- Deep cultivation too near the roots breaks off the new roots and slows up growth.
- Thrips cause deformed flowers and prevent flower spikes from opening at all.

- Thrips on bulbs should be killed before planting. In the garden, start dusting or spraying with Fungicide when leaves are six inches tall.
- Water is essential for growing Gladiolus successfully.
- Rain seldom supplies enough moisture, but start watering when there are five leaves on the plants.

vi. Storing the Bulbs

- Leave 1 inch of the stem and cut.
- Store Gladiolus at about 70 degrees for a month to dry the corms.
- Divide the bulbs, clean the debris.
- Let them be at 70 degrees for a week.
- Then store at 50 degrees.(Do not wash the bulbs with water)
- Store them in a box or tub lined with peat

9. Plantation and Harvesting

Table: 1 Plantation and Harvest Timing

Flower Variety	Plantation Timing	Harvest Timing	Plant to Plant Distance	Row to Row Distance
Chrysanthemum	Seed Nursery / Cutting (March-April) Transfer to beds (May)	October	1ft	2ft
Gladiolus	Corms (March – May)	June - August	0.6ft	2ft
Statice	Seed nursery (February) Seed in Beds (March) Seedling shifting (April)	June - August	1ft	2ft
Marigold	Seed nursery (February) Seed in Beds (After 15 th March) Seedling shifting (April)	June - August	1.25ft	2ft

- Preparation of land is of utmost importance for production of cut flower farm. The field should be levelled and small channels must be provided for supply of water.
- The field can be prepared in best way by dividing in parallel cut flower fields having water canals on one side and driveway on the other.
- Wind can cause damage to the flowers. Artificial windbreaks can be used.
- Planting time vary with the variety of the cut flower.
- Plantation should be done in batches with some time interval which will ensure availability of products throughout the growing season.
- Water should be provided by analyzing the condition of the soil by looking at dampness.
- For best results micro irrigation system can be used which causes minimum damage to the shoot and flower.

- Cut flowers are harvested a few days before full bloom to increase their shelf life.
- Harvesting the flowers early in the morning also helps in keeping the freshness and hence increases shelf life.

i. Picking of Flowers

It is an important process as it plays vital role for determining the price of flowers. Following steps should be followed

- Picking should always be done early in the morning.
- After picking wash the flowers in clean water.
- Flowers should be treated with life enhancing solutions to increase their life.
- Dry flowers with natural after the use of preservatives.
- Inspect each flower for its quality then pack in wooden / cardboard boxes.
- Ready for delivery / distribution.

ii. Tips for Long-Lasting Cut Flowers

Check the water level of the container or vase daily and add water plus preservative when needed.

Keep flowers away from hot or cold air drafts and hot spots (radiators, direct heat, or television sets).

While both drafts and hot spots increase water loss, hot spots reduce a flower's life by speeding transpiration (water loss) and respiration (use of stored food such as sugars) and increasing development (rate of petal unfolding).

When away from home, move the flowers into the refrigerator or the coldest (above 35° F/1.5° C) spot in the house. Again, this will slow down water loss, respiration, and development.

Never store fruit and flowers together. Apples produce ethylene gas, a hormone that causes senescence, or aging, in flowers.

In summary, to keep cut flowers longer:

- Recut the stems and remove excess foliage.
- Harden the flowers by setting them in warm water in a cool place.
- Use a floral preservative.
- Keep them cool and avoid drafts, hot spots, and television sets.
- Use a clean vase or container and check the water level daily.

10. Machinery and Equipment Requirement

The equipment required for the project is as follows:

Table 2: Tube well, Machinery and Farm Equipment Requirement

Items	Cost Rs.
Shovels, Pickaxes, Cutters etc.	100,000
Tube wells	350,000
Tractor & Implement	600,000
Total	1050,000

11. Human Resource Requirements

Semi skilled workers are needed to look after the plants, watering, fertilizer application, insecticide use planting and harvesting at the farm. The personal needed for the farm is as under:

Table 3: Permanent Staff

Description	Number	Monthly Salary per Person (Rs.)	Annual Salary (Rs)
Farm Manager	1	15,000	180,000
Labour (Mali)	32	6,000	2,304,000
Guard	1	6,000	72,000
Total	34		2,556,000

Apart from the above mentioned staff requirements, part time workers for six months will be required during the picking season. Following table shows the part time staff requirements:

Table 4: Part-time Staff

Description	Number	Salary (Month) (Rs)	Total Salary (Rs)
Labour (Mali)	50	5,500	1,440,000

12. Land and Building Requirement

The agriculture land on lease is recommended for floriculture farm. Rural areas around the major cities of the country are the suitable areas for setting up this farm. All the management functions should be performed tactically, right from the selection of the site to the final stage when the flowers are sold. Total required land for this project is fifty acre. The building will comprise of office, store, packing room etc. The area required in square feet is as under: -

Table 5: Land Requirement

Flower Variety	Land (Acre)	Per Acre Rent Rs.	Total Rent Rs.
Chrysanthemum	12	15,000	180,000
Gladiolus	12	15,000	180,000
Statice	12	15,000	180,000
Marigold	14	15,000	210,000
Total	50		750,000

Table 6: Building Requirement

Description	Area (sq.ft.)	Cost (Rs. / sq.ft.)	Total (Rs.)
Office	320	800	256,000
Packing Shed	360	200	72,000
Store	360	600	216,000
Servant Room	220	600	132,000
Nursery	4,500	80	360,000
Rooms for Staff	450	600	270,000
Kitchen	120	600	72,000
Total Area	6,330		1,378,000

13. Project Detail

Capital Investment	Rs.
Building/Infrastructure	1,378,000
Tube well and Farm Equipment	1,050,000
Office furniture & equipments	75,000
Pre-operational Expenses	45,000
Vehicles	850,000
Total Capital Cost	3,398,000

Working Capital	Rs.
Raw material inventory	4,900,000
Cash	400,000
Total Working Capital	5,300,000

Total Investment	8,698,000
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Financing		Rs.
Equity	50%	4,349,000
Debt	50%	4,349,000

14. Projected Income Statement

	Rs.									
	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year-10
Revenue from sale of vegetable	24,748,230	25,985,642	27,284,924	28,649,170	30,081,628	31,585,710	33,164,995	34,823,245	36,564,407	38,392,627
Cost of Sales										
Cost of Seeds	4,903,114	5,148,270	5,405,683	5,675,967	5,959,766	6,257,754	6,570,642	6,899,174	7,244,132	7,606,339
Operations costs (direct labor)	3,924,000	4,120,200	4,326,210	4,542,521	4,769,647	5,008,129	5,258,535	5,521,462	5,797,535	6,087,412
Machine Maintenance	150,000	157,500	165,375	173,644	182,326	191,442	201,014	211,065	221,618	232,699
Fertilizers Cost	300,000	315,000	330,750	347,288	364,652	382,884	402,029	422,130	443,237	465,398
Pesticide Cost	100,000	105,000	110,250	115,763	121,551	127,628	134,010	140,710	147,746	155,133
Direct Water	480,000	528,000	580,800	638,880	702,768	773,045	850,349	935,384	1,028,923	1,131,815
Total cost of sales	9,857,114	10,373,970	10,919,068	11,494,062	12,100,709	12,740,883	13,416,579	14,129,925	14,883,191	15,678,796
Gross Profit	14,891,116	15,611,672	16,365,855	17,155,108	17,980,920	18,844,827	19,748,416	20,693,320	21,681,216	22,713,831
Operating Expense										
Payroll (Admin)	72,000	75,600	79,380	83,349	87,516	91,892	96,487	101,311	106,377	111,696
Fixed electricity	60,000	66,000	72,600	79,860	87,846	96,631	106,294	116,923	128,615	141,477
Administrative Overheads	247,482	259,856	272,849	286,492	300,816	315,857	331,650	348,232	365,644	383,926
Amortization (Pre-operational Expenses)	45,000	15,000	15,000	15,000	15,000	-	-	-	-	-
Transport Cost	2,359,000	2,370,795	2,382,649	2,394,562	2,406,535	2,418,568	2,430,661	2,442,814	2,455,028	2,467,303
Packing Cost	1,415,400	1,422,477	1,429,589	1,436,737	1,443,921	1,451,141	1,458,396	1,465,688	1,473,017	1,480,382
Depreciation	270,900	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000
Total	4,469,782	4,349,728	4,392,068	4,436,000	4,481,635	4,514,088	4,563,487	4,614,969	4,668,681	4,724,784
Operating Profit	10,421,334	11,261,943	11,973,788	12,719,108	13,499,285	14,330,739	15,184,929	16,078,351	17,012,536	17,989,047
Non-Operating Expense										
Interest expense on long term debt	385,488	385,488	385,488	385,488	385,488					
Land Lease	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
Total	1,135,488	1,135,488	1,135,488	1,135,488	1,135,488	750,000	750,000	750,000	750,000	750,000
Earnings Before Tax	9,285,846	10,126,455	10,838,300	11,583,620	12,363,797	13,580,739	14,434,929	15,328,351	16,262,536	17,239,047
Commission of Agent	464,292	506,323	541,915	579,181	618,190	679,037	721,746	766,418	813,127	861,952
NET PROFIT	8,821,553	9,620,133	10,296,385	11,004,439	11,745,607	12,901,702	13,713,182	14,561,933	15,449,409	16,377,095

15. Input Assumptions

Table 7: Seed Assumptions

Flower Variety	Cost per Seed/Corm Rs.	Average Seed Requirement in unit/ Acre	Av. Seed Price/ Acre	Total Seed Price
Chrysanthemum	1.80	21,780	39,204	470,448
Gladiolus	6.00	36,300	217,800	2,613,600
Statice	3.60	21,780	78,408	940,896
Marigold	3.60	17,424	62,726	878,170

Table 8: Production Assumptions

Flower Variety	Bundles per Acre	Land (Acre)	Total Production Quantity	Loss (7%)	Net Bundles Production
Chrysanthemum	14,000	12	168,000	11,760	156,240
Gladiolus	1,900	12	22,800	1,596	21,204
Statice	17,000	12	204,000	14,280	189,720
Marigold	5,500	14	77,000	5,390	71,610

Table 9: Sale Price Assumptions

Flower Variety	Net Bundles Production	Sale Price Per Bundle Rs.	Total Sale Price Rs.
Chrysanthemum	156,240	40	6,249,600
Gladiolus	21,204	295	6,255,180
Statice	189,720	40	7,588,800
Marigold	71,610	65	4,654,650

Table 10: Expense Assumptions

Crop Wastage	7%
Administrative Overhead (% of Total Revenue)	1%
Water cost per Irrigation per Acre (Rs.)	800
Irrigation (No. of Months)	6
No. of times land irrigated (per month)	2
Fixed Electricity per Month (Rs)	5,000
Transport Cost per kg / bundle (Rs)	5.00
Packing Cost per kg / bundle (Rs)	3.00
Machine Maintenance (machine/month)	10,000
Pesticide per Acre per Year (Rs)	6,000
Fertilizer Cost per Acre per Year (Rs)	2,000

Table 11: Depreciation Assumption

Depreciation Method	Straight Line Method
Building depreciation rate	5%
Machinery & Equipment depreciation rate	10%
Office Equipment depreciation rate	10%
Furniture & Fixtures depreciation rate	10%

Table 12: Growth Rate Assumptions

Electricity Growth Rate	10%
Water price growth rate	10%
Wage Growth Rate	5%
Machine Maintenance Growth Rate	5%
Sale Price Growth Rate	5%

16. Disclaimer

The content of the information memorandum does not bind NBP in any legal or other form as the purpose of this report is to provide a general idea and information to NBP staff to assist them evaluate the feasibility reports submitted by the clients, and for the farmers and organizations interested to grow floriculture farm. The data and info reported in this document is gathered from various sources and is based on certain assumptions. In spite of taking due diligence in compiling this report, the contained information may vary due to any change in any of the relevant factors e.g. demand and selection of flowering varieties, export limitations, preservation, post harvest care, agro-climatic conditions, farm management, diseases, pests, low production, market prices etc. and the actual results may differ substantially from the presented information. NBP does not assume any liability for any financial or other loss resulting from this document in consequence of undertaking this Project.