

40 FLUORICULTURE IN GLASS HOUSE



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1. INTRODUCTION

The "Fluoriculture in Glass House" project is a micro and small investment venture aimed at promoting and enhancing floriculture in the Uttarakhand region of India. This project focuses on the cultivation of various flowering plants and ornamental crops within controlled greenhouse environments, harnessing modern agricultural techniques to ensure year-round production of high-quality flowers. Uttarakhand, known for its serene landscapes and pleasant climate, offers a conducive environment for the flourishing of floriculture activities.

2. PRODUCT & ITS APPLICATION

The primary products of the "Fluoriculture in Glass House" project are high-quality flowers, including but not limited to roses, gerberas, carnations, orchids, and lilies. These flowers serve multiple purposes and find applications in various sectors:

- **Decorative and Gifting:** The flowers cultivated in the greenhouse can be used for decorative purposes in homes, hotels, and event venues. They are also popular choices for gifting on special occasions such as weddings, birthdays, and anniversaries.
- **Floral Arrangements:** Florists and event planners use greenhouse-grown flowers to create stunning floral arrangements and bouquets for various events and celebrations.
- **Religious and Cultural Significance:** Flowers hold cultural and religious significance in India. They are used in rituals, ceremonies, and temple offerings.
- **Pharmaceutical and Perfumery Industries:** Some flowers are used in the extraction of essential oils and fragrances, which are then utilized in the pharmaceutical and perfumery industries.
- **Export:** Uttarakhand's floriculture products have the potential to be exported to international markets, contributing to the state's economy.

3. DESIRED QUALIFICATION FOR PROMOTER

The promoter should have agricultural knowledge, business acumen, technical expertise, financial management skills, market research capabilities, and networking skills. Agricultural knowledge aids in plant care and disease management, while business acumen ensures commercial success. Technical expertise in greenhouse technology and climate control is essential for efficient operations. Financial management skills help sustain the project, and market research guides cultivation practices. Networking with florists, wholesalers, and buyers facilitates marketing and distribution.

4. INDUSTRY OUTLOOK AND TRENDS

The floriculture industry in Uttarakhand is experiencing growth fueled by domestic and international demand for high-quality flowers. Key trends and opportunities include a shift towards organic and sustainable practices, increased interest in exotic varieties, leveraging online retail platforms for wider reach, exploring export potential, collaborating with event planners for consistent sales, and investing in research and development to enhance crop quality and yield. These trends indicate promising avenues for promoters to capitalize on in the flourishing floriculture sector of Uttarakhand.

Here are some floriculture market trends:

- In 2022, the Indian floriculture market size was INR 231.7 billion.
- By 2028, the Indian floriculture market is expected to reach INR 460.6 billion, with a CAGR of 12.13% between 2022 and 2028.
- According to Future Market Insights (FMI), the floriculture market is estimated at USD 57.5 billion in 2023, and is projected to reach USD 106.1 billion by 2033.

- According to Technavio, the floriculture market is estimated to grow at a CAGR of 8.6% between 2022 and 2027.

5. MARKET POTENTIAL AND MARKETING ISSUES; IF ANY

The project holds significant market potential driven by growing demand for fresh flowers, particularly for religious, social, and tourism-related purposes. Flowers have cultural and religious significance and are in high demand in the hospitality sector. Additionally, there are export opportunities to neighboring countries. However, the project faces marketing challenges such as competition from established players, seasonal fluctuations affecting production, distribution challenges in hilly terrains, pricing strategies balancing profitability and affordability, and the need for robust pest and disease management to maintain product quality. Addressing these issues is crucial for the successful implementation and sustainability of the project.

Here are some floriculture production companies in Uttarakhand:

- **Nainital:** Shri Laxmibadri Agro Foods Private Limited, Ronith Seeds
- **Pithoragarh:** Himchuli Agri Producer Company Limited, Apicare Organic Farms

6. RAW MATERIAL REQUIREMENTS

The primary raw materials required for the "Floriculture in Glass House" project include:

- **Seeds or Saplings:** These are the starting point for flower cultivation. The selection of high-quality seeds or saplings of desired flower varieties is crucial.
- **Greenhouse Infrastructure:** The greenhouse structure, including the frame, covering material (typically polyethylene), and climate control systems, is essential for controlled cultivation.
- **Soil and Growing Medium:** Depending on the flower varieties, specific soil mixes or growing media may be required to provide optimal nutrition and drainage for the plants.
- **Fertilizers and Nutrients:** Flowers require appropriate fertilizers and nutrients to support growth and blooming.

Some of suppliers of raw materials:

- **Horticultural Impex:** No. 05, Panditwari, Near Etlantis Club, Dehradun-248007, Uttarakhand, India
- **Sugatu Global:** 100 Race Course Road, Dehradun(India)-248001 No. 100, Dehradun-248001, Uttarakhand, India
- **Aquatic Chemicals:** No. 202, Kuntal, Mody Estate, Ghatkopar West, Mumbai - 400086, Maharashtra, India
- **Redox Industries Limited:** B/411, Signature 2, Opposite Relief Hotel, Sarkhej Sanand Road, Sarkhej, Ahmedabad - 382210, Gujarat, India

7. MANUFACTURING PROCESS

The flower cultivation process in a greenhouse entails selecting an appropriate location and setting up climate control systems for temperature and humidity. Quality flower seeds or saplings are procured and planted in trays with suitable soil. After transplanting into the greenhouse, flowers are regularly watered and monitored for growth. Fertilizers and pest control measures are applied as needed. Flowers are harvested at the right bloom stage, handled carefully, bundled, and stored before distribution. Marketing strategies target local customers, hotels, and event planners, with distribution channels ensuring timely delivery. Export opportunities are also explored. Attention to crop health, soil, and pest management is crucial for successful cultivation and meeting market demands.

BIS has standards for horticulture, including:

- IS 15351: 2015
- IS 15907: 2010
- IS 16008 (Part 2): 2016
- IS 16008 (Part 1): 2016
- IS 16089: 2013
- IS 16190: 2014
- IS 16202: 2014
- IS 16390: 2015

8. MANPOWER REQUIREMENT

Sr. No	Particulars	No.	No of month in year	Wages/Salaries per month (Rs. In Lakhs)	Annual Expense (Rs. In Lakhs)
1	Self-employed	1	-	-	-
2	Skilled Person	2	12	0.25	6
3	Semi-skilled Person	3	12	0.2	7.2
4	Unskilled	1	12	0.12	1.44
	Total				14.64

9. IMPLEMENTATION SCHEDULE

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	1
2	Construction (if applicable)	1.5
3	Procurement & installation of Plant & Machinery	2.5
4	Arrangement of Finance	1
5	Recruitment of required manpower	1
6	Total time required (some activities shall run concurrently)	3

10. COST OF PROJECT

Sr. No	Particulars	Annual Expenses (Rs. in lakhs)
1	Land	-
2	Building (Rented)	-
3	Plant & Machinery	15.67
4	Equipment and Furniture Exp.	0.90
5	Misc. Fixed Asset	0.02
6	Preoperative & Preliminary Exp.	0.15
7	Working Capital	6.34
	Total Project Cost	23.08

11. MEANS OF FINANCE

Bank-term loans are assumed @ 60%

Sr. No.	Particulars	Annual Expenses (Rs. in lakhs)
1	Promoter's contribution	9.23
2	Bank Finance	13.85
	Total	23.08

12. LIST OF MACHINERY REQUIRED

A. Machinery

Sr. No	Particulars	Unit	Price per Unit (Rs. in lakhs)	Total Amount (Rs. in lakhs)
1	Greenhouse Structure and Setup	Set	8.00	8.00
2	Climate Control Systems	Set	3.50	3.50
3	Irrigation System	Set	1.00	1.00
4	Growing Trays/Pots	Set	0.12	0.12
5	Seedling/Transplanting Equipment	Set	0.20	0.20
6	Fertilizer and Nutrient Application	Set	0.35	0.35
7	Pest and Disease Control Equipment	Set	0.25	0.25
8	Harvesting Tools and Equipment	Set	0.10	0.10
9	Packaging Materials	Set	0.15	0.15
10	Water Storage and Distribution	Set	0.50	0.50
Total Amount				14.17
Tax, Transportation, Insurance etc.				1.00
Electrification Exp.				0.50
Grand Total Amount				15.67

B. Furniture & Equipment

Sr. No	Particulars	Unit	Price per Unit (Rs. in lakhs)	Total Amount (Rs. in lakhs)
1	Office Furniture and Workstations	set	0.40	0.40
2	Computer and Printer	1	0.50	0.50
Total Rs.				0.90

- **Kumarika Enterprises:** 1st Floor, Mamaji Complex, A.B Road, Rau, Indore - 453331, Madhya Pradesh, India
- **V- Tech Agro Industries:** C15, Industrial Area, Phase 1, Sector 56, Mohali - 160059, Punjab, India
- **Greentech India:** Shop No 1, Gat No 182, Paud Road, Bhukum, Pirangut, Pune - 412115, Maharashtra, India

13. PROFITABILITY CALCULATIONS

Sr. No	Particulars	Annual Expenses (Rs. in lakhs)
A.	Sales realisation	76.05
B.	Cost of production	
i)	Raw materials	22.82
ii)	Utilities	0.50
iii)	Manpower Cost (Salaries/wages)	14.64
iv)	Administrative expenses	0.70
v)	Packaging Cost	0.11
vi)	Material Lost Cost	0.11
vii)	Selling & distribution expenses	1.44
viii)	Repairs & maintenance	0.00

ix)	Rent	0.40
x)	Interest	1.58
xi)	Misc. expenses	0.00
	Total (B)	42.30
	Gross profit/loss (A – B)	33.75
	Less: Depreciation	1.55
C.	PBIT	32.20
D.	Income-tax	3.50
E.	Net profit/loss	27.37
F.	Repayment (Annual)	1.36
G.	Retained surplus (E-F)	26.01

14. BREAKEVEN ANALYSIS

(Rs. in Lakhs)

Fixed cost	
Land & Building Rent	0.40
Depriciation	1.55
Interest	1.58
Manpower	4.39
Total Fixed cost	7.92
Variable cost	
Raw materials	22.82
Utilities	0.50
ManPower	10.25
Administrative expenses	0.70
Selling & distribution expenses	1.44
Total Variable cost	35.70
Contribution margin	20%
Break-Even Point in Value	39.61

15. STATUTORY/GOVERNMENT APPROVALS

Before starting the fluoriculture project, it's essential to obtain various statutory and government approvals. This ensures compliance with local regulations and environmental standards. Some of the key approvals and licenses you may need include:

- A. Water Rights and Usage:** If you plan to use groundwater or surface water for irrigation, you may need permits for water extraction and usage.
- B. Agricultural Subsidies and Incentives:** Explore government schemes and subsidies for agricultural projects, which can significantly reduce your project's costs.
- C. Business Registration and Licensing:** Register your business and obtain any necessary licenses and permits required for agricultural activities.
- D. Tax Registrations:** Register for Goods and Services Tax (GST) and any other applicable taxes.

16. BACKWARD AND FORWARD INTEGRATIONS

A. Backward Integration

Backward integration involves activities related to the sourcing and production of inputs required for the project. For a fluoriculture project, this may include:

1. **Seed Production:** Consider setting up your own seedling production unit to ensure a consistent and healthy supply of planting material.
2. **Compost and Fertilizer Production:** Invest in composting facilities or organic fertilizer production units to recycle farm waste and reduce external input costs.
3. **Water Management Infrastructure:** Build rainwater harvesting systems or water storage facilities to ensure a consistent water supply for irrigation.
4. **Pest and Disease Control:** Establish a biological pest and disease control unit to produce beneficial insects or natural predators for pest management.

B. Forward Integration

Forward integration involves activities related to processing, marketing, and distribution of your floriculture products. Here are some options for forward integration:

1. **Value-Added Product Manufacturing:** Consider processing flowers into value-added products like essential oils, dried flowers, or floral arrangements for sale in local and export markets.
2. **Direct Marketing:** Explore direct marketing channels such as farmer's markets, online sales platforms, or tie-ups with local florists and retailers.
3. **Export Opportunities:** If your flowers meet international quality standards, consider exporting them to foreign markets, which can significantly increase revenue.
4. **Cold Storage and Transportation:** Invest in cold storage facilities and a reliable transportation network to maintain product quality during distribution.
5. **Retail Outlets:** Establish your retail outlets or partner with existing floral shops to sell your products directly to customers.

17. TRAINING CENTERS AND COURSES

For individuals interested in pursuing a career in floriculture or seeking to enhance their knowledge and skills in this field, various training centers and courses are available in Uttarakhand, India. These training programs provide hands-on experience, technical know-how, and exposure to modern techniques in floriculture. Below are some notable training centers and courses:

1. Uttarakhand University of Horticulture and Forestry (UUHF):

- Location: Bharsar, Pauri Garhwal District, Uttarakhand.
- Courses Offered: UUHF offers undergraduate and postgraduate programs in Horticulture and Floriculture. These courses cover various aspects of floriculture, including cultivation techniques, pest management, and post-harvest handling.

2. Krishi Vigyan Kendras (KVKs):

- Location: Various districts in Uttarakhand.
- Courses Offered: KVKs conduct short-term training programs, workshops, and field demonstrations related to floriculture and horticulture. These programs are designed to benefit farmers and entrepreneurs.

3. National Horticulture Board (NHB):

- Location: NHB organizes training programs and workshops on floriculture and other horticultural practices. While not located in Uttarakhand, they may collaborate with state-level agencies to conduct training sessions in the region.

4. Private Institutes and Agricultural Universities:

- Several private institutes and agricultural universities in Uttarakhand may offer certificate or diploma courses in floriculture. These programs often cover topics such as greenhouse management, soil and nutrient management, and flower arrangement.

5. Online Courses and Workshops:

- Various online platforms and organizations offer courses and webinars related to floriculture. These digital resources provide flexibility and accessibility for individuals looking to learn about floriculture from anywhere.
- Swayam portal (link: <https://swayam.gov.in/>) can also be accessed for enhanced learning on business commerce, accounting, production, marketing, and areas of entrepreneurship.

6. Government-Sponsored Skill Development Programs:

- The Government of Uttarakhand may periodically launch skill development programs in the agriculture and horticulture sector, including floriculture. These programs aim to empower individuals with practical skills and knowledge.

7. Floriculture Associations and Farmer Groups:

- Local floriculture associations and farmer groups often organize training sessions and knowledge-sharing events. Joining such groups can provide access to valuable training opportunities.

It's advisable for aspiring floriculturists and entrepreneurs to research specific training programs, their duration, content, and eligibility criteria before enrolling. Additionally, staying updated with government initiatives and collaborating with local agricultural authorities can help individuals discover new training opportunities in the field of floriculture in Uttarakhand.

Disclaimer

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