

Turmeric Based Value Added Products

1. INTRODUCTION

Uttarakhand, widely recognized for its abundant natural resources and diverse climate, provides an ideal environment for cultivating high-quality turmeric. Local farmers have traditionally grown turmeric in the region, leveraging the nutrient-rich soils and optimal climatic conditions. This regional advantage, combined with increasing consumer awareness of the numerous health benefits associated with turmeric, offers significant opportunities for developing value-added turmeric products in Uttarakhand.

2. PRODUCT & ITS APPLICATION

Product	Annual Production (Kg)	Market Price (INR/Kg)	Annual Revenue (INR)
Turmeric Powder	5000	250	1,250,000
Curcumin Extract	500	3500	1,750,000
Turmeric Oil	200	8000	1,600,000
Turmeric Soap	1000	100	100,000
Turmeric Capsules	1500	500	750,000

3. DESIRED QUALIFICATION FOR PROMOTER

No formal education is required to start a turmeric-based value-added product unit. However, basic knowledge of turmeric cultivation, processing techniques, and product development can be highly beneficial. The promoter should have good managerial and marketing skills, and a willingness to learn technical aspects of herbal product processing. Prior experience in food or herbal processing or completion of relevant short-term courses from institutions like EDII or Krishi Vigyan Kendra can add value and improve the success rate of the venture.

4. BUSINESS OUTLOOK AND TRENDS

Increasing awareness about natural and herbal products significantly boosts the market for turmeric-based products. The Uttarakhand region is well-positioned to meet rising demands both

domestically and internationally, projected to grow at 7-9% annually. The growing popularity of Ayurvedic and natural wellness products, increased health consciousness, and demand from global markets such as the USA, Europe, and the Middle East contribute substantially to market expansion. Additionally, government initiatives promoting organic farming and herbal products further enhance market prospects for turmeric-based products in Uttarakhand.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY

5. Turmeric-based value-added products have tremendous potential in Uttarakhand due to increasing consumer demand for natural, organic, and herbal products. The state's biodiversity and government support toward organic farming create a favorable environment for the industry. The presence of tourism in Uttarakhand also offers a niche market for herbal souvenirs, skincare products, and wellness items.

However, several challenges may arise:

- **Awareness:** Limited awareness among local farmers and entrepreneurs regarding value addition and market demand.
- **Branding and Packaging:** Lack of professional packaging and branding can reduce competitiveness.
- **Market Linkages:** Difficulty accessing national and international markets due to limited networks.
- **Price Fluctuations:** Variability in turmeric prices can affect profitability.
- **Quality Standards:** Meeting quality certification requirements for export may be costly and complex.

With focused marketing strategies, government assistance, and the use of digital platforms, these issues can be mitigated to tap into national and global herbal product markets effectively.

6. RAW MATERIAL REQUIREMENTS

Raw material requirements for selected herbal extracts are given below :

- **Medicinal and Aromatic Plants:** Commonly used plants include lavender, rosemary, eucalyptus, peppermint, chamomile, **lemongrass, oregano, basil, lemon balm, and stevia.**
- **Essential Oils:** High-quality essential oils extracted from these plants.
- **Solvents:** Ethanol or other suitable solvents for extracting active compounds.

- **Packaging Materials:** Bottles, jars, and labels for storing and selling the final products.
- **Preservatives:** Natural preservatives to ensure the longevity of the extracted products.

7. MANUFACTURING PROCESS

The manufacturing process of turmeric-based value-added products involves the following key steps:

- **Procurement of Raw Turmeric Rhizomes:** Sourcing high-quality turmeric from local farms, preferably organic-certified.
- **Cleaning and Washing:** Turmeric rhizomes are thoroughly washed to remove soil, stones, and other impurities.
- **Boiling:** Cleaned rhizomes are boiled in large vats to remove the raw odor and deactivate enzymes that cause spoilage.
- **Drying:** The boiled turmeric is dried in solar or mechanical dryers to reduce moisture content.
- **Polishing:** Dried turmeric is polished mechanically to improve appearance.
- **Grinding and Pulverizing:** Polished turmeric is ground into powder using pulverizers.
- **Extraction:** Curcumin and essential oils are extracted using solvent extraction methods.
- **Formulation:** Extracted products are formulated into capsules, oils, soaps, or other formats.
- **Packaging:** The final products are packed into consumer-ready packaging such as bottles, pouches, or boxes.
- **Storage and Dispatch:** Packaged products are stored under hygienic conditions and dispatched to the market.

Proper hygiene and quality control measures are followed at each step to ensure product efficacy, safety, and shelf life.

8. MANPOWER REQUIREMENT

Position	Number	Monthly Salary (INR)	Annual Cost (INR)
Manager	1	25,000	300,000
Skilled Labor	2	15,000	360,000
Semi-skilled Labor	2	10,000	240,000

Sales and Marketing	1	20,000	240,000
Administrative Staff	1	15,000	180,000
Total	7	85,000	1,320,000

7. IMPLEMENTATION SCHEDULE

The following schedule outlines the estimated time required for each major activity to set up the turmeric-based value-added product unit:

Activity	Duration (in Months)
Finalization of Project Report	0.5
Acquisition of Land / Lease Agreement	0.5
Procurement & Installation of Machinery & Tools	1.0
Regulatory Approvals & Registrations	1.0
Recruitment and Training of Manpower	1.0
Trial Production and Quality Checks	0.5
Commercial Production Commencement	0.5
Total Estimated Implementation Time	3 to 4 Months

8. COST OF PROJECT

Particulars	Amount (INR)
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Land and Building (Rental)	150,000
Plant and Machinery	400,000
Working Capital	500,000
Miscellaneous	150,000
Total Project Cost	1,200,000

9. MEANS OF FINANCE

Source	Amount (INR)	Percentage (%)
Promoter's Contribution	480,000	40%
Bank Finance	720,000	60%
Total	1,200,000	100%

10. LIST OF EQUIPMENT REQUIRED

Machinery and Equipment Required:

Equipment	Quantity	Unit Cost (INR)	Total Cost (INR)
Grinder and Pulverizer	1	150,000	150,000
Solvent Extractor	1	200,000	200,000
Drying Equipment (Tray dryer)	1	30,000	30,000
Drying Equipment (Spray dryer)	1	120,000	120,000
Packaging Machine (Bottle filler)	1	50,000	50,000
Capsule Filling Machine	1	60,000	60,000
Total	6		610,000

11. SALES REALISATION

Product Category	Revenue (INR)
Domestic Market Sales	3,500,000
Export Market Sales	1,950,000
Total Annual Revenue	5,450,000

12. PROFITABILITY CALCULATIONS

Particulars	Amount (INR)
Sales Revenue	5,450,000
Less: Cost of Production	3,000,000
Gross Profit	2,450,000
Operating Expenses	1,200,000
Net Profit	1,250,000

13. BREAK-EVEN ANALYSIS

Particulars	Amount (INR)
Fixed Costs	600,000
Variable Costs per unit	250
Selling Price per unit	500
Break-even Quantity	2400 Units
Break-even Sales	1,200,000

14. STATUTORY/GOVERNMENT APPROVALS

Setting up a spirulina superfood production unit in Uttarakhand would require several statutory and government approvals to ensure regulation compliance.

1. Business Registration: Business registration has to be made with the appropriate local authorities within the Local Municipal Corporation or Panchayat.

2. Trade License: A trade license is required to operate a retail business. GST Registration: Goods and Services Tax (GST) registration is a must for taxation purposes

3. FSSAI (Food Safety and Standards Authority of India) Approval: This approval ensures that the product meets the food safety standards laid out by the Food Safety and Standards Act, 2006.

4. Pollution Control Board (State Pollution Control Board - SPCB) Approval: The production unit will require approval from the Uttarakhand Environment Protection and Pollution Control Board (UEPPCB) to ensure compliance with water and air pollution control norms.

5. Organic Certification (As per requirement): If you wish to market your spirulina as organic, you will need to obtain organic certification from recognized bodies such as India Organic (under the National Program for Organic Production - NPOP) or USDA Organic for international markets

15. BACKWARD AND FORWARD INTEGRATIONS

Backward Integration: Backward integration involves strengthening the supply side by connecting directly with turmeric growers. In Uttarakhand, this can be done by forming partnerships or contracts with local farmers to ensure consistent and high-quality raw turmeric supply. This not only reduces dependency on middlemen but also ensures fair pricing and better income for farmers. Farmers can also be supported with training on organic cultivation, quality control, and post-harvest handling. Setting up collection centers near farming areas will further streamline procurement.

Key Backward Integration Strategies:

- Contract farming with local organic turmeric growers
- Providing technical training and quality seed inputs
- Establishing raw material collection and grading centers

- Promoting farmer producer organizations (FPOs)

Forward Integration: Forward integration focuses on value addition, branding, and market access. By processing turmeric into products like curcumin extract, capsules, oils, and cosmetics, the business moves closer to the end consumer. Selling through retail outlets, e-commerce platforms, wellness centers, and export channels expands the market reach. Certification and branding play a critical role in appealing to health-conscious consumers.

Key Forward Integration Strategies:

- Launching branded product lines (powder, capsules, oils, etc.)
- Selling via organic and Ayurvedic stores
- Online sales through marketplaces like Amazon, Flipkart, and personal websites
- Exporting through global trade exhibitions and B2B tie-ups
- Obtaining quality certifications like FSSAI, USDA Organic, and ISO

16. TRAINING CENTERS AND COURSES

To support and sustain turmeric-based value-added enterprises in Uttarakhand, several reputed institutions and initiatives offer relevant training and capacity-building programs. These programs enhance skills in cultivation, food and herbal processing, marketing, packaging, and entrepreneurship development.

Key Training Institutions:

- **Krishi Vigyan Kendra (KVK), Uttarakhand:** Conducts hands-on field training in turmeric cultivation, post-harvest handling, and organic farming methods.
- **Entrepreneurship Development Institute of India (EDII):** Offers certified entrepreneurship and business development programs focused on agro-based industries.
- **G.B. Pant University of Agriculture and Technology, Pantnagar:** Provides technical diplomas and short courses in food processing, agri-entrepreneurship, and herbal product development.
- **Central Food Technological Research Institute (CFTRI), Mysore:** Offers advanced courses in food technology and herbal extraction, especially helpful for scaling and innovation.

- **National Institute of Food Technology Entrepreneurship and Management (NIFTEM):** Focuses on modern food processing, safety standards, and startup incubation.

Online Learning Platforms:

- **SWAYAM (<https://swayam.gov.in/>):** Offers free, government-recognized courses on agriculture, business, production technology, and entrepreneurship.
- **IGNOU and NPTEL Platforms:** Provide online certificate courses in food safety, herbal products, and SME management.

These centers are essential for skill development, ensuring both the technical competence and business success of entrepreneurs in the turmeric value chain.

Disclaimer

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.