



# Project Profile

## **DANDELION CULTIVATION AND VALUE ADDED PRODUCTS IN LADAKH**

# Dandelion Cultivation and Value-Added Products in Ladakh

(A Sustainable Agri-Business Opportunity)

## 1. INTRODUCTION

Dandelion (*Taraxacum officinale*), once considered a common weed, is rapidly emerging as a high-value crop in global nutraceutical, cosmetic, and functional food industries. Its roots, leaves, and flowers are rich in vitamins A, C, K, minerals like potassium and calcium, and powerful phytochemicals such as inulin, sesquiterpene lactones, and flavonoids. These properties make dandelion a potent ingredient in detox teas, liver tonics, herbal supplements, skincare products, and plant-based foods.

Ladakh, with its unique agro-ecological characteristics—high-altitude terrain (1,800 to 4,500 meters), cool arid climate, minimal pesticide usage, and 300+ sunny days per year—offers an exceptional environment for cultivating dandelion organically. The plant's natural tolerance to drought, cold, and poor soil quality makes it ideally suited for Ladakh's climate-stressed farming conditions. Its deep taproots help in soil aeration and rehabilitation, offering ecological benefits alongside economic returns.

With the global herbal product market expected to reach **USD 180 billion by 2030**, driven by demand for clean-label, plant-based wellness products, dandelion presents a transformative crop for Ladakh's rural economy. Traditional crops like barley and peas generate limited income (₹20,000–₹30,000/ha annually), whereas dandelion cultivation combined with value-added processing (e.g., herbal tea, dried roots, dandelion coffee, liver support capsules, or cosmetics) has the potential to yield over **₹3–₹5 lakh per hectare**.

This project aims to build an integrated value chain—from cultivation and primary processing to branding and marketing of high-value dandelion products for domestic and export markets. By doing so, it will:

- **Diversify local agriculture** and reduce dependency on subsistence crops.
- **Enhance farmer incomes and entrepreneurship**, particularly among women and youth.
- **Promote climate-resilient farming** and support India's mission for a carbon-neutral Ladakh.
- **Leverage Ladakh's pristine image** to position its herbal products as premium and authentic.

Aligned with the **National Mission on Medicinal Plants (NMMP)**, **Ladakh Vision 2047**, and **One District One Product (ODOP)** frameworks, this initiative also creates opportunities for skill development, eco-certification, and agro-tourism. The project envisions Ladakh not only as a production zone but as a brand for high-altitude botanicals trusted for purity, potency, and sustainability.

## 2. PRODUCT & ITS APPLICATION

Product	Applications
<b>Dandelion Root Coffee</b>	Caffeine-free herbal coffee alternative; rich in antioxidants.

Product	Applications
<b>Dried Leaves/Flowers</b>	Herbal teas, salads, supplements (digestive health, detox).
<b>Dandelion Oil/Extract</b>	Cosmetics (anti-aging creams, serums), pharmaceuticals (liver tonic, diuretic).
<b>Latex</b>	Niche use in natural rubber production.
<b>Supplements</b>	Capsules/powders for immunity, digestion, and inflammation reduction.

### 3. DESIRED QUALIFICATION FOR PROMOTER

- **Education:** Degree in agriculture, food technology, herbal sciences, or business management.
- **Skills:**
  - Organic farming practices.
  - Knowledge of herbal product development and food safety standards.
  - Digital marketing and export compliance.
- **Experience:** Prior work in agri-processing, wellness products, or rural entrepreneurship.
- **Networking:** Collaboration with local farmers, cooperatives, and e-commerce platforms.

### 4. INDUSTRY LOOKOUT AND TRENDS

- **Growth Drivers:**
  - Global herbal supplement market to reach **\$117 billion by 2027** (CAGR: 6.8%).
  - Rising demand for vegan, gluten-free, and detox products.
- **Trends:**

- Sustainable packaging and carbon-neutral certifications.
- Government schemes: *PM Formalization of Micro Food Processing Enterprises (PMFME)*, *UT Ladakh Agri-Plan*.
- **Challenges:**
  - Consumer perception of dandelion as a weed.
  - Seasonal harvesting constraints (April–October).

## 5. MARKET POTENTIAL & MARKETING ISSUES

Aspect	Details
<b>Market Potential</b>	- Domestic herbal tea market: <b>₹1,200+ crore</b> (2023).
	- Export demand in EU, North America for organic dandelion extracts.
<b>Marketing Issues</b>	- Low awareness of dandelion's health benefits.
	- High logistics costs due to Ladakh's remoteness.
<b>Solutions</b>	- Certifications (India Organic, FSSAI, USDA).
	- Branding as a premium "Himalayan Superfood."

## 6. RAW MATERIAL REQUIREMENTS

Material	Source	Annual Requirement (2 Ha)
Dandelion seeds	Certified organic vendors	8–10 kg
Organic compost	Local production	2–3 tonnes
Eco-friendly packaging	Suppliers in Chandigarh	5,000 units/month

## 7. MANUFACTURING PROCESS

### 1. Cultivation:

- Sowing in April–May; drip irrigation for water efficiency.
- Organic pest management (neem oil, cow urine).

### 2. Harvesting:

- Roots (autumn), leaves/flowers (spring–summer).

### 3. Processing:

- **Roots:** Washed → sliced → dried → roasted (for coffee).
- **Leaves/Flowers:** Solar-dried → powdered (for teas).
- **Oil Extraction:** Cold-pressed or solvent-based methods.

### 4. Packaging: Airtight, biodegradable pouches with QR-linked traceability.

## 8. MANPOWER REQUIREMENT

Role	Number	Skill Level	Monthly Cost (₹)
Farm laborers	8–10	Semi-skilled	20,000
Processing technicians	4	Skilled (QA/QC)	40,000
Sales & Marketing	2	Experienced	50,000
Admin & Finance	1	Professional	30,000

## 9. IMPLEMENTATION SCHEDULE

Phase	Activities	Timeline
<b>Pre-Planting</b>	Land leasing, soil testing, seed procurement	1 month
<b>Cultivation</b>	Sowing, irrigation, organic fertilization	5 months
<b>Processing</b>	Unit setup, machinery installation	2 months

Phase	Activities	Timeline
Marketing	Branding, e-commerce setup, B2B tie-ups	3 months

## 10. COST OF PROJECT (INR)

Component	Cost (₹)
Land lease (2 hectares)	1,50,000
Machinery	12,00,000
Infrastructure	4,50,000
Raw materials	3,00,000
Labor (1st year)	8,40,000
Contingencies	1,60,000
<b>Total</b>	<b>31,00,000</b>

## 11. MEANS OF FINANCE (INR)

Source	Amount (₹)
Promoter Contribution	10,00,000
Bank Loan (Term loan)	18,00,000
Govt. Subsidy	3,00,000
<b>Total</b>	<b>31,00,000</b>

## 12. LIST OF MACHINERY REQUIRED

<b>Machinery</b>	<b>Quantity</b>	<b>Cost (₹)</b>	<b>Purpose</b>
Solar dryer	2	4,00,000	Drying leaves/roots
Cold-press oil extractor	1	7,00,000	Oil extraction
Roasting machine	1	2,00,000	Roasting roots for coffee
Grinder/Packaging unit	1	1,50,000	Powdering and sealing

### 13. PROFITABILITY CALCULATIONS (ANNUAL)

<b>Metric</b>	<b>Value (₹)</b>
Revenue (1,000 kg oil + 500 kg tea)	60,00,000
Operating Cost	35,00,000
Net Profit	25,00,000
ROI	<b>35%</b>

### 14. BREAK-EVEN ANALYSIS

<b>Parameter</b>	<b>Value</b>
Fixed Costs	12,00,000
Variable Cost/unit	₹600
Selling Price/unit	₹1,500
<b>BEP (units)</b>	<b>1,200 units</b>

### 15. STATUTORY/GOVERNMENT APPROVALS



1. **FSSAI License** (for food products).
2. **Organic Certification** (NPOP/India Organic).
3. **APEDA Registration** (for exports).
4. **Pollution Control Board Clearance**.
5. **Local Permits** (Ladakh Autonomous Hill Council).

## 16. BACKWARD & FORWARD INTEGRATIONS

- **Backward:**
  - Establish seed banks for high-yield dandelion varieties.
  - In-house organic compost production.
- **Forward:**
  - Direct-to-consumer e-commerce platform.
  - Partnerships with wellness chains (e.g., Himalaya, Organic India).

## 17. TRAINING CENTERS AND COURSES

1. **Central Institute of Temperate Horticulture (CITH), Srinagar:** Organic farming workshops.
2. **APEDA Export Promotion Councils:** Training on international quality standards.
3. **NABARD:** Agri-entrepreneurship and financial management programs.
4. **Local NGOs (LEDeG):** Skill development in processing and packaging.

## 18. SUPPLIERS

For establishing a **Dandelion Cultivation and Value-Added Products** venture in Ladakh, selecting the appropriate machinery is crucial to ensure efficient processing and high-quality end products. Below is a curated list of machinery suppliers and manufacturers that cater to various stages of dandelion processing:

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### 1. Essential Oil Extraction Units

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### **Swaraj Herbal Plants Pvt. Ltd. – Ambala, Haryana**

- **Specialization:** Manufacturers of essential oil extraction equipment, including steam distillation units suitable for dandelion oil extraction.
- **Features:** Offers customizable solutions tailored to specific plant materials and extraction capacities.
- **Website:** [swarajindia.com](http://swarajindia.com)

### **Leo Boiler – India**

- **Specialization:** Provides essential oil extraction equipment, including condensers, vacuum pumps, extraction tanks, and solvent holding tanks.
- **Features:** Caters to various scales of operation with equipment designed for efficiency and quality.
- **Website:** [leoboiler.com](http://leoboiler.com)

### **Gagan International – Ludhiana, Punjab**

- **Specialization:** Offers integrated essential oil extraction and herbal oil extraction machinery ranging in capacity from 2 to 60 tons.
- **Features:** Provides comprehensive solutions for large-scale oil extraction needs.
- **Website:** [gaganinternational.com](http://gaganinternational.com)



## **2. Herbal Tea Processing and Packaging**

### **VM Food Processing & Packaging Machines – New Delhi**

- **Specialization:** Manufactures automatic herbal tea bag packing machines suitable for dandelion tea packaging.
- **Features:** Machines designed for efficient packing, maintaining flavor and aroma integrity.
- **Website:** [vmfoodmachines.com](http://vmfoodmachines.com)

### **Zigma Machinery & Equipment Solutions – Coimbatore, Tamil Nadu**

- **Specialization:** Provides tea blending and processing machines, including herbal tea making machines.
- **Features:** Offers equipment for uniform blending and processing of herbal teas.
- **Website:** [zigmainternational.in](http://zigmainternational.in)



## **3. Drying and Grinding Equipment**

### **Sikri Packaging Corporation LLP – Kolkata, West Bengal**

- **Specialization:** Offers herb processing machines, including dryers and grinders suitable for dandelion roots and leaves.
- **Features:** Benchtop models ideal for small to medium-scale operations.
- **Website:** [sikripackaging.co.in](http://sikripackaging.co.in)

### **Mariya Engineering Works – Coimbatore, Tamil Nadu**

- **Specialization:** Manufactures tea processing machinery, including hydraulic juice presses and other related equipment.
- **Features:** Provides machinery suitable for processing herbal products like dandelion.
- **Website:** mariyaenginworks.com [mariyaenginworks.com](http://mariyaenginworks.com)

#### 4. International Suppliers

##### **Alibaba.com** – Global Marketplace

- **Specialization:** Offers a variety of herbal tea making machines, including automatic, multifunctional equipment for the production of various herbal teas.
- **Features:** Options available for different scales of operation, from small-scale to industrial-scale setups.
- **Website:** alibaba.com

## 19. CONCLUSION

Dandelion cultivation in Ladakh offers a unique opportunity to capitalize on the global shift toward natural, functional products. By integrating organic farming, value-added processing, and strategic marketing, this project can generate sustainable income for local communities while positioning Ladakh as a hub for premium Himalayan wellness products. Government support, certifications, and eco-friendly practices will be key to overcoming logistical and market challenges.