

# 34 MUSHROOM GROWING



# MUSHROOM GROWING

## 1. INTRODUCTION

The project, "Mushroom Growing," presents a viable and sustainable micro and small investment opportunity in the picturesque region of Uttarakhand, India. Uttarakhand, known for its lush green landscapes and favorable climate, offers an ideal environment for mushroom cultivation. This project aims to provide comprehensive information and guidance to potential entrepreneurs interested in harnessing the immense potential of mushroom cultivation within the state.

## 2. PRODUCT & ITS APPLICATION

The primary objective of the Mushroom Growing project is to cultivate and harvest various types of edible mushrooms, including white button mushrooms, oyster mushrooms, and shiitake mushrooms. These mushrooms have versatile applications and are highly sought after in the food industry. The end products and their applications include:

- **Fresh Mushrooms:** Freshly harvested mushrooms are used in a wide range of culinary dishes, including soups, salads, stir-fries, and various gourmet preparations.
- **Dried Mushrooms:** Drying mushrooms extends their shelf life and enhances their flavor. Dried mushrooms are used in soups, sauces, and as a seasoning in various dishes.
- **Mushroom Extracts:** Mushroom extracts, such as shiitake extract, have gained popularity for their potential health benefits and are used in dietary supplements and functional foods.
- **Mushroom Compost:** The spent mushroom substrate, known as mushroom compost, is a valuable organic fertilizer and soil conditioner used in agriculture.

The project not only caters to the growing demand for fresh and dried mushrooms in the local and regional markets but also offers opportunities for value addition through processing and product diversification.

## 3. DESIRED QUALIFICATION FOR PROMOTER

Prospective Mushroom Growing promoters in Uttarakhand need agricultural knowledge, business acumen, market awareness, hygiene and quality control, compliance with regulations, and environmental responsibility. Understanding cultivation techniques, managing operations, knowing market demand, and ensuring product quality are crucial for success. Compliance with regulations and implementing eco-friendly practices are also necessary for legal and sustainable operations in the mushroom farming business.

## 4. INDUSTRY OUTLOOK AND TRENDS

The Mushroom Growing industry in Uttarakhand holds promise due to growing health awareness, local sourcing preferences, culinary diversity, export opportunities, and value-added products. Mushrooms are increasingly recognized as a nutritious food choice, driving demand. Local sourcing and organic preferences present opportunities for Uttarakhand's mushroom farms. Culinary versatility allows entrepreneurs to cater to niche markets with unique mushroom varieties. Export potential exists, especially in the Middle East and Europe. Additionally, value-added products like dried mushrooms and snacks offer avenues for diversification, highlighting the industry's growth potential in Uttarakhand.

The global mushroom cultivation market is expected to grow at a considerable rate between 2022 and 2030. In 2022, the market was valued at USD 28497.76 million and is expected to reach USD 37410.81 million by 2028.

Some factors that are driving the growth of the mushroom market include:

- **Increasing demand:** The demand for button mushrooms is increasing rapidly, and sales and revenue in this sector have grown exponentially.
- **Rising consumer awareness:** Consumers are becoming more aware and are increasingly preferring online channels for purchasing fresh produce.
- **Rising demand for vegan diets:** According to the Plant Based Foods Association, plant-based food sales grew 6.2% in 2021.

## 5. MARKET POTENTIAL AND MARKETING ISSUES; IF ANY

The Mushroom Growing industry in Uttarakhand holds robust market potential driven by increasing health consciousness, culinary diversity, local sourcing preferences, a growing hospitality sector, and export opportunities. Mushrooms are valued for their nutritional benefits and culinary versatility, appealing to health-conscious consumers and culinary enthusiasts alike. However, entrepreneurs may face marketing challenges such as seasonal variability, perishability, competition, price fluctuations, consumer awareness, and distribution challenges. Overcoming these issues through market research, quality control, packaging, and efficient distribution strategies is crucial for the success of Mushroom Growing businesses in Uttarakhand's dynamic market.

The mushroom business in Uttarakhand is profitable and doesn't require much investment. Some say that selling mushrooms at local farmer's markets can be lucrative, as customers are willing to pay a fair price for quality. Others say that selling online is a great way to sell mushrooms if you are looking for convenience.

The Garhwal region of Uttarakhand produces 7,000 tonnes of mushrooms annually, while the Kumaon region produces 1,710 tonnes. Dehradun and Haridwar are hubs for mushroom production, with many units exporting their mushrooms to Europe.

The best growing season for mushrooms in hilly areas is from March or April to September or October. In lower regions, the growing season is from September or October to March.

Here are some mushroom farms in Dehradun:

- **Krishivan research center:** Krishivan Research Centre and Training, Jhajhra, Jhajra, Dehradun - 248007 (Near Balaji Hanuman Mandir)
- **Valley Farm Mushrooms Pvt Ltd:** Shahid Krishna Bdr Marg, Shahid Krishna Bdr Margchakarata Road, Selakui, Dehradun - 248197 (Behind Obc Bank)
- **Lakhe Mushroom Farm:** Gat No 39, Shrigonda, Ahmednagar - 413726 (At Post Mundhekar Wadi)
- **Fresh Mushroom Farm:** Fresh Mushroom Farm, East Hopetown, Uttarakhand, Dehradun - 248007

## 6. RAW MATERIAL REQUIREMENTS

Mushroom cultivation primarily relies on the following raw materials:

- **Mushroom Spawn:** Mushroom spawn serves as the "seed" for mushroom cultivation. It's typically available in the form of mycelium-infused substrate or grain spawn and is used to inoculate the growing medium.
- **Growing Medium:** The most common growing medium for mushrooms is a mixture of organic materials such as straw, sawdust, or compost. The choice of growing medium depends on the mushroom species being cultivated.

- **Water:** Adequate and clean water is essential for maintaining the moisture levels required for mushroom growth.
- **Climate Control Equipment:** Depending on the mushroom variety, climate control equipment such as temperature and humidity controllers may be needed to create optimal growing conditions.
- **Packaging Materials:** Packaging materials are required for storing and transporting harvested mushrooms. These may include mushroom trays, punnets, or packaging for dried mushrooms.

Some suppliers for raw materials:

- **JMD Farms:** Surkanda Mata Mandir Ground Floor Brahampuri, Brhampuri, Sahstradhara, Dehradun - 248001 (Near Sai Dham)
- **Rahul Beej Bhandar:** Jhanda Bazar, Dehradun, Kanwali Road, Saharanpur Chowk, Dehradun - 248001 (Saharanpur Chok)
- **Krishi Sewa:** Shop No E4, Niranjana Pur, Dehradun - 248171 (Near Sabji Mandi)
- **Ved Communication:** Residence Office- 302, Naya Gaon, Shivalpur Colony, Dehradun City, Dehradun - 248001 (Near Transport Nagar and Durga Mandir)

## 7. BUSINESS PROCESS

The manufacturing process for Mushroom Growing involves several key steps. Firstly, spawn preparation ensures the purity and vigor of the mushroom spawn, typically grown on substrates like grains or agar. Secondly, the selected growing medium is sterilized or pasteurized to eliminate competing microorganisms. Thirdly, inoculation occurs as the sterilized medium is combined with mushroom spawn in a controlled environment to prevent contamination. Fourthly, during incubation, the mycelium colonizes the substrate in a dark, humid environment. Then, environmental conditions are adjusted to induce fruiting, leading to the development of mature mushrooms. Following this, mushrooms are harvested at the right stage of maturity, packaged, and distributed to local markets or processing facilities.

The following are some FSSAI norms for mushroom cultivation businesses:

- The owner should maintain a logbook
- Mushroom package labels should include the owner and product information
- FSSAI can penalize FBOs for breaching labeling norms

The following are some FSSAI regulations for canned mushrooms:

- All articles intended for sale or storage must be fit for consumption and have proper cover to avoid contamination
- Vehicles used to transport food must be kept clean and maintained in good repair
- Foods in packaged or container form must maintain the required temperature while in transport

When selecting a site for mushroom cultivation, the following are some considerations:

- The unit should preferably be outside the municipal limits
- The site should have easy access to raw materials, quality water, and labor
- The site for disposal of spent substrate is important as its accumulation near the site of cultivation can lead to more diseases

Oyster mushrooms are the best type of mushrooms for novice growers because they are easy to cultivate, grow quickly, and are in high demand.



## 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	2	12	0.15	3.6
4	Unskilled	3	12	0.12	4.32
	<b>Total</b>				<b>13.92</b>

## 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	5.95
4	Equipment and Furniture Exp.	1.50
5	Misc. Fixed Asset	0.02
6	Preoperative & Preliminary Exp.	0.35
7	Working Capital	2.75
	<b>Total Project Cost</b>	<b>10.57</b>

## 11. MEANS OF FINANCE

Bank-term loans are assumed @ 60 %

Sr. No.	Particulars	Annual Expenses (Rs. in lakhs)
1	Promoter's contribution	4.23
2	Bank Finance	6.34
	<b>Total</b>	<b>10.57</b>

## 12. LIST OF MACHINERY REQUIRED

### A. Machinery

Sr. No	Particulars	Unit	Price per Unit (Rs. in lakhs)	Total Amount (Rs. in lakhs)
1	Sterilization Equipment	set	0.50	0.50
2	Mushroom Growing Shelves/Racks	set	0.30	0.30
3	Climate Control Systems (if needed)	set	0.80	0.80
4	Pasteurization Equipment	set	0.40	0.40
5	Harvesting Tools	set	0.10	0.10
6	Packaging Machinery	set	0.60	0.60
7	Refrigeration Units	set	0.70	0.70
8	Water Filtration and Irrigation System	set	0.35	0.35
9	Hygiene and Sanitization Equipment	set	0.20	0.20
10	Generator for Power Backup	set	0.40	0.40
Total Amount				4.45
Tax, Transportation, Insurance etc.				1.00
Electrification Exp.				0.50
Grand Total Amount				5.95

### B. Furniture & Equipment

Sr. No	Particulars	Unit	Price per Unit (Rs. in lakhs)	Total Amount (Rs. in lakhs)
1	Computer & Printer	1	0.85	0.85
2	Office Furniture (Desks, Chairs, Storage racks, etc.)	-	0.65	0.65
<b>Total Rs.</b>				<b>1.50</b>

1. Karma Agro & Machine Tools  
Kenal Road, Ballupur Chowk,  
Raipur Dhaal, Near Sports College,  
Dehradun-248001, Uttarakhand, India

2. J.B. Industries  
Plot No. 36, Nilgiri Extension,  
Delhi Bypass Road 14, Harmada,  
Jaipur - 302013, Rajasthan, India

3. Shri Organic Farming  
S.A. 306, Jai Govind Complex,  
Khazane Waloan Ka Rasta,  
Near Indira Bazar, Jaipur - 302001,  
Rajasthan, India

### 13. PROFITABILITY CALCULATIONS

Sr. No	Particulars	Annual Expenses (Rs. in lakhs)
A.	Sales realisation	60.00
B.	Cost of production	
i)	Raw materials	24.00
ii)	Utilities	1.50
iii)	Manpower Cost (Salaries/wages)	13.92
iv)	Administrative expenses	0.70
v)	Packaging Cost	0.12
vi)	Material Lost Cost	0.12
vii)	Selling & distribution expenses	7.56
viii)	Repairs & maintenance	0.00
ix)	Rent	0.40
x)	Interest	0.71
xi)	Misc. expenses	0.00
	Total (B)	49.03
	Gross profit/loss (A – B)	10.97
	Less: Depreciation	0.67
C.	PBIT	10.30
D	Income-tax	3.50
E	Net profit/loss	8.76
F.	Repayment (Annual)	0.56
G	Retained surplus (E-F )	8.20

### 14. BREAKEVEN ANALYSIS

Fixed cost	
Land & Building Rent	0.40
Depriciation	0.67
Interest	0.71
Manpower	4.18
<b>Total Fixed cost</b>	<b>5.95</b>
Variable cost	
Raw materials	24.00
Utilities	1.50
ManPower	9.74
Administrative expenses	0.70
Selling & distribution expenses	7.56
<b>Total Variable cost</b>	<b>43.50</b>
<b>Contribution margin</b>	<b>20%</b>
Break-Even Point in Value	29.76

## 15. STATUTORY/GOVERNMENT APPROVALS

In Uttarakhand, India, setting up a Mushroom Growing business involves obtaining various statutory and government approvals to ensure compliance with local regulations. Entrepreneurs must navigate through the following approvals and permits:

- A. Business Registration:** Register the business entity with the appropriate government authorities, such as the Registrar of Companies (ROC) for private limited or LLP registration.
- B. Agricultural Land Lease/Ownership:** Ensure that you have legal access to the land where you plan to cultivate mushrooms. Verify land ownership or lease agreements.
- C. Water Usage Permits:** If your mushroom farm requires significant water usage, secure necessary permits for water extraction and use from relevant authorities.
- D. Goods and Services Tax (GST) Registration:** Register for GST with the Goods and Services Tax Network (GSTN) to comply with India's indirect tax system.

A mushroom cultivation business is subject to the FSS Act of 2006 and requires an FSSAI license registration. You may also need a trade license, and state-level and local licenses and permits.

## 16. BACKWARD AND FORWARD INTEGRATIONS

### A. Backward Integration

Backward integration in the Mushroom Growing project in Uttarakhand involves activities that bring the business closer to the source of raw materials and enhance control over the supply chain. Potential strategies for backward integration include:

- 1. Compost Production:** Consider producing your own mushroom compost, which is a critical component of the growing medium. This reduces dependency on external suppliers and ensures quality control.
- 2. Spawn Production:** Invest in spawn production facilities to produce your mushroom spawn in-house, enabling better control over spawn quality and availability.
- 3. Raw Material Sourcing:** Build relationships with local farmers or suppliers for sourcing organic materials used in mushroom substrate, ensuring a consistent supply.

### B. Forward Integration

Forward integration focuses on activities that take the Mushroom Growing business closer to the end customers and market. Potential strategies for forward integration include:

- 1. Retail Outlets:** Establish retail outlets or stalls in local markets, supermarkets, and urban areas within Uttarakhand to directly reach consumers.
- 2. Value-Added Products:** Explore the production of value-added mushroom products such as dried mushrooms, mushroom-based snacks, or processed mushroom extracts for retail sale.
- 3. Online Sales:** Develop an online presence through e-commerce platforms to sell fresh and processed mushrooms directly to customers.
- 4. Export Opportunities:** Consider exporting dried or processed mushrooms to international markets, leveraging Uttarakhand's proximity to major cities and potential export hubs.

## 17. TRAINING CENTERS AND COURSES

For individuals and entrepreneurs interested in venturing into Mushroom Growing in Uttarakhand, there are training centers and courses available to acquire the necessary skills and knowledge. These training centers offer a range of programs related to mushroom cultivation, mushroom farming techniques, and the business aspects of mushroom production. Here's a list of notable training centers and courses:



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

- Located in Bharsar, Pauri Garhwal, UUHF offers various agricultural and horticultural courses, including workshops and training programs on mushroom cultivation and mushroom spawn production.

### **2. Indian Council of Agricultural Research (ICAR) - Directorate of Mushroom Research:**

- Situated in Solan, Himachal Pradesh, this institute conducts training programs and workshops on various aspects of mushroom cultivation, including oyster, button, and medicinal mushrooms.

### **3. State Agricultural Universities (SAUs):**

- SAUs in Uttarakhand, such as GB Pant University of Agriculture and Technology, may offer short-term courses and workshops related to mushroom cultivation and farm management.

### **4. National Horticulture Board (NHB):**

- NHB periodically organizes training programs and workshops on mushroom cultivation techniques, quality control, and post-harvest management.

### **5. Krishi Vigyan Kendras (KVKs):**

- KVKs located across Uttarakhand may conduct mushroom cultivation training programs for farmers and enthusiasts, providing hands-on experience and technical guidance.

### **6. Non-Governmental Organizations (NGOs):**

- Local NGOs and agricultural development organizations sometimes offer mushroom cultivation training and support to rural communities and aspiring mushroom farmers.

It's advisable for aspiring mushroom growers in Uttarakhand to contact these institutions, universities, and organizations directly for information on upcoming training programs, course availability, and enrollment procedures. Additionally, some training programs may provide financial support or grants to individuals pursuing mushroom cultivation as a livelihood or business opportunity.

#### **Disclaimer**

Only few machine manufacturers/institutes are mentioned in the profile, although many machine manufacturers/institutes are available in the market. The addresses given for machinery manufacturers/institutes 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.