

**PROJECT PROFILE
ON MUSHROOM
UNIT**

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INTRODUCTION

Mushrooms are a type of Fungi, which are consumed as food. It is gradually becoming popular, as they are rich in minerals and vitamins and very low on fat and sugar. There is a high protein content in Mushroom and it is popular as “Vegetable Meet”. Fresh mushrooms have very limited life and hence they need to be consumed within few hours. But, processing and canning increases their shelf-life to few months which is being utilized for the export potential of this product.

It is also known to have medicinal values and certain varieties of mushrooms can inhibit growth of cancerous tumor. The productivity of mushroom is significantly high than other crops. Food, nutritional and medicinal values apart, mushroom growing can be efficient means of waste disposal (agricultural, industrial and family wastes), since it can use the wastes as medium of growth. Hence, it could be considered as eco-friendly.

In India only three types, namely, button, oyster and straw mushrooms are commercially cultivated. Button mushroom accounts for 90 percent of India's production of mushrooms. About 38 percent of the total world production of mushrooms is button mushroom. Further, mushroom growing is highly labour intensive which is compatible with Indian labour surplus economy and requirement of land is comparatively low.

PRODUCTS AND ITS APPLICATION

- Fresh Mushrooms for cooking. With the help of fresh mushroom value added products such as mushrooms pickle, jam, sauce, candy, preserve, chips etc.
- From the dried mushroom powder value added products like instant soup mix, bakery products, papad, nuggets etc. can be prepared. Processed extracts also use for Medicine.
- Canned mushrooms refers to the product prepared from the sound, succulent, fresh mushroom by proper trimming, washing, and sorting and is packed with the addition of water in hermetically sealed containers and sufficiently processed by heat to assure preservation of the product. Salt, or monosodium glutamate, or both may be added in a quantity sufficient to season the product. Ascorbic acid (Vitamin C) may also be added to improve the shelf life. Uses of canned mushroom is as follow:
 - Mushroom is used as in ingredient in a number of dishes such as curries, sandwich, soup etc.
 - The canned mushrooms can be added to salads, rice preparations and as a delectable topping on pizzas.
 - The canned mushrooms can be used for various Indian recipes like mushroom matar (with peas), tandoori mushroom (grilled mushrooms) or even mushroom biryani.

DESIRED QUALIFICATION FOR PROMOTER

Usually in India, farmers are involved in the manufacturing process by using simple tools and manual indoor methods. However, for the canned and dried mushroom proper skills is required.

INDUSTRY OUTLOOK/TREND

If we look on the top 5 Mushroom importing countries from India in the current year, except Nepal every one is a developed country and the export volume in USD (Million) is not negligible for each case. All these are shouting towards the export and industrial prospect of Mushroom.

Top 5 Mushroom Importers from India in the Current Year

Country	Export Value in USD (Million)
France	3.4
USA	3.32
Germany	3.14
Switzerland	1.08
Nepal	0.41

MARKET POTENTIAL AND MARKETING ISSUES, IF ANY

Mushrooms are very popular in most of the developed countries and they are becoming popular in many developing countries like India and few of the South East Asian countries. Applications and market for mushroom is growing rapidly in India because of their nice aroma, nutritious values, subtle flavour and special taste. It is now a day uses as the substitute of animal protein. Many exotic food preparations like soup, vegetables, pickles etc. are made from them. They are also used for garnishing, to prepare many varieties of gravy and for stuffing several food preparations. However, they are still considered as up-market product and their consumption is limited to urban and semi urban areas. Fresh mushrooms have very limited shelf life but processed and canned mushrooms have long shelf life and can be sold even at far off places. Star hotels, exclusive restaurants, certain caterers are the bulk consumers and a firm tie-up for regular supply with some of them is advisable. The product can be sold even through departmental stores, super markets etc. Still now, this is not available in case of local street markets of rural or semi urban areas. In villages of few states of West Bengal has a tradition of mushroom consumption grown naturally in-home fields, especially at rainy season. But the commercial approach of Mushroom consumption is rare in case of rural or semi urban India.

The medical uses of Mushrooms are also not negligible. It has a healing property in most of the variants. The culture of using Mushrooms as a treatment input is thousands of year old in case of

Eastern world. Hence, the medicinal content of Mushroom is another market prospect of this product.

RAW MATERIAL REQUIREMENTS

Mushrooms are the basic raw material besides this a negligible amount of salt and citric acid is also required.

Sl. No.	Particulars	Rate (KG) in INR
1	Raw Mushrooms	60-70
2	Salt	20
3	Sugar	40
4	Chemicals like Citric Acid, ascorbic acid, etc.	50-100

Average raw material cost per Kg. around INR 80 to 85.

Raw material requirement per year

Sl. No.	Particulars	Volume (KG)	Raw Material Requirement per year (Assumptions of capacity utilization)				
			1 st	2 nd	3 rd	4 th	5 th
1	Machine Capacity (KG per hour)	100					
2	Per day production (assuming 8 hrs. shift)	800					
3	Per annum production (300 days in a year)	240000	50%	55%	60%	65%	70%
4	Wastage (@11%)	26400					
5	Total raw material requirement per annum	266400					
6	Per can size	0.85					
7	Total Can production (in number)	282,353	141177	155294	169412	183530	197647

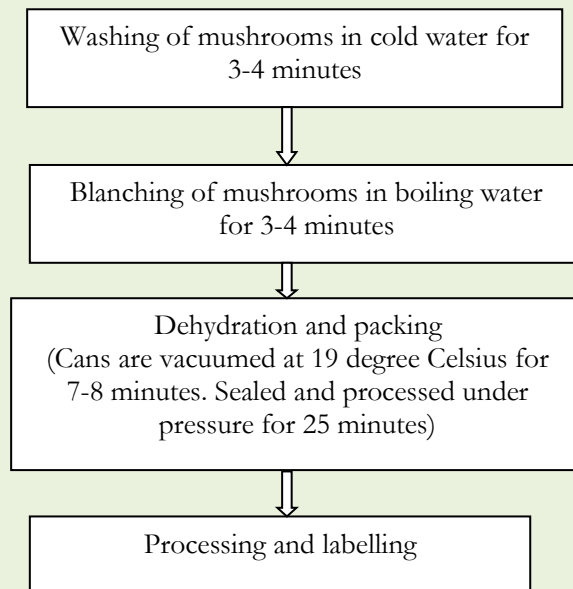
Packing materials cost

Year	Rate (INR)	Number of Can required	Cost (in INR Lakh)
1 st year	10.00	141177	14.12
2 nd year	10.50	155294	16.31
3 rd year	11.03	169412	18.69
4 th year	11.58	183529	21.25
5 th year	12.16	197647	24.03

MANUFACTURING PROCESS

Mushrooms are generally processed in six steps with simple and manual arrangements by the Mushroom farmers. The steps are respectively, Making Mushroom compost, Finishing the compost, spawning, casing, pining and cropping. The requirement of capital is moderately high in this case but still it is a labour intensive crop.

Process flow chart of preparation of canned mushrooms is as follows:



MANPOWER REQUIREMENT (PER MONTH)

Type	Number	Cost (Rs.)
Supervisor	1	18,000
Accountant	1	17,000
Labour (skilled)	2	26,000
Labour (unskilled)	3	27,000
Helper	2	12,000
Total per month	11	100,000
Total per annum		12,00,000

LAND

Particulars	Units	Details
Land (Covered)	Sq. Ft.	3500
If rented area, rent	Rs.	40000

MACHINERY SPECIFICATIONS

Types of machinery	Quantity
Canning Section	
Balancing equipment	1
Steam jacketed kettle	1
Filling Table	1
Straight line exhaust box	1
Seam checking Gauge	1
Hand Cans Tester	1
Vacuum Tester	1
Canning Retort	1

Total cost of the above machineries come around 5.5 lakh excluding GST and transportation cost.

Types of machinery	Quantity
Canning Reforming Section	
Hand flanger	1
Double seamer	1
Round can body beader	1
Empty can washer & steriliser	1
Steam boiler	1

Total cost of the above machineries come around 9 lakh excluding GST and transportation cost. Other requirement are power connection or DG set as a standby and basic furniture. These will cost around 1.5 lakh.

COST OF THE PROJECT

Sl. No	Particulars	Cost (Rs.)
1	Land rent	40,000
2 a	Plant & Machinery - Canning Section	5,50,000
2b	Canning Reforming Section	9,00,000
2c	DG	1,50,000
3	Furniture	1,50,000
4	Working Capital	9,46,000
	Total	27,36,000

IMPLEMENTATION SCHEDULE

Project Stages	Months.....						
	1	2	3	4	5	6	7
Acquisition of Land	■	■					
Ordering of Machinery	■	■					
Delivery of Machinery			■	■	■		
Term/Working Loan Sanction		■	■				
Installation of Machinery				■	■		
Commissioning of Plant						■	
RM/Inputs Procurement						■	
Manpower Appointments				■	■		
Commercial Production							■

SALES REVENUE

Particulars	1 st year	2 nd year	3 rd year	4 th year	5 th year
Opening stock	-	4,706	5,176	5,647	6,118
Production	141177	155294	169412	183529	197647
Less closing stock	4,706	5,176	5,647	6,118	6,588
Net sale (opening stock + Production – Closing stock)	136471	154824	168941	183058	197177
Price per can	110	116	122	128	134
Sales (in INR lakh)	150.12	179.60	206.11	234.31	264.22

WORKING CAPITAL ASSESSMENT

Particulars	Value (in INR lakh)
Finished Goods	4.60
Raw materials	3.56
Closing Stock	8.16
Less: Creditor	3.20
Paid Stock	4.96
Sundry Debtors	4.50
Working Capital	9.46

PROFITABILITY CALCULATION

Sl. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
A	Gross Sales	150.12	179.60	206.11	234.31	264.22
	Less:					
1	Raw Materials	106.67	123.20	140.80	159.47	181.07
2	Power	4.80	5.52	6.35	7.30	8.03
3	Depreciation	2.33	1.98	1.69	1.45	1.23
4	Manpower	12.00	13.20	14.52	15.98	17.57
5	Repairs and maintenance	3.75	3.77	4.95	5.86	5.55
6	Packaging	14.12	16.31	18.68	21.25	24.20
7	Cost of production	138.02	157.78	180.16	203.78	229.22
8	Add opening stock	-	4.60	5.26	6.01	6.79
9	Less closing stock	4.60	5.26	6.01	6.79	7.64
10	Cost of sales	133.42	157.12	179.41	202.99	228.37
11	Gross Profit	16.70	22.48	26.69	31.32	35.85
12	Interest on term loan	1.18	1.04	0.75	0.45	0.16
13	Interest on WC loan	0.77	0.77	0.77	0.77	0.77
14	Rent	4.80	5.28	5.81	6.39	7.03
15	Admin & Marketing expenses	2.25	5.03	5.77	6.09	5.94
B	Total	14.64	18.32	19.92	21.21	22.16
C	Gross Profit (A-B)	2.05	4.16	6.77	10.11	13.69
	Tax	-	-	0.18	0.65	1.40
	Net Profit	2.05	4.16	6.59	9.46	12.29

BREAK EVEN POINT ANALYSIS

Sl. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
	Gross Sales	150.12	179.60	206.11	234.31	264.22
A1	Less: Work in progress goods	-	4.60	5.26	6.01	6.79
A2	Add: Closing Stock	4.60	5.26	6.01	6.79	7.64
A	Total Sale	154.72	180.25	206.85	235.10	265.06
	Variable & Semi variable expenses					
B1	Raw Materials	106.67	123.20	140.80	159.47	181.07
B2	Power (85%)	4.08	4.69	5.40	6.21	6.83
B3	Manpower (60%)	12.00	13.20	14.52	15.98	17.57
B4	Admin & Marketing expenses (80%)	1.80	4.02	4.62	4.87	4.76
B5	Interest on WC loan	0.77	0.77	0.77	0.77	0.77
B6	Repairs and maintenance	3.75	3.77	4.95	5.86	5.55
B7	Packaging	14.12	16.31	18.68	21.25	24.20
B	Total Variable & Semi variable expenses	138.39	160.68	183.92	208.00	233.53
	Contribution (A-B)	16.33	19.57	22.94	27.10	31.53
	Fixed & Semi-fixed expenses					
C1	Power (15%)	0.72	0.83	0.95	1.10	1.20
C2	Manpower (40%)	4.80	5.28	5.81	6.39	7.03
C3	Interest on term loan	1.18	1.04	0.75	0.45	0.16
C4	Depreciation	2.33	1.98	1.69	1.45	1.23
C5	Admin & Marketing expenses (20%)	0.45	1.01	1.15	1.22	1.19
C6	Rent	4.80	5.28	5.81	6.39	7.03
C	Total Fixed & Semi-fixed expenses	14.27	15.42	16.16	16.99	17.84
	Capacity Utilization	50%	55%	60%	65%	70%
C	Operating Profit (A-B)	2.05	4.16	6.77	10.11	13.69
	Break Even Point	44%	43%	42%	41%	40%

References

- NIFTEM Reports on Mushroom
- Report on Mushroom Processing by Global AgriSystem Pvt. Ltd.
- KVIC Report on Mushroom Processing

Video Link – Mushroom Canning

<https://www.youtube.com/watch?v=kOVpibOYsq8>

MANUFACTURES/ SUPPLIERS OF MACHINERY

- Shree Rutumbhara Mushroom Enterprises, Pune, India
- B. K Machine Works, Coimbatore, India
- A.S Raja Sons Enterprise Pvt. Ltd., Vishakapatnam, India
- Felcon Industries, Ludhiana, India
- India Agro Visison Implements Pvt. Ltd., Jaipur, India
- Rainbow Mushrooms, Vazapadi, Salim, Tamil Nadu, India
- Shri Krishna Musrooms, Krishnapuri, Mathura, India
- SAALVI Agro Mushrooms, TIRUCHIRAPPALLI, TAMILNADU, India
- Buddha Mushroom Pvt. Ltd., Bihar Sariff, Nalanda, Bihar

STATUTORY/ GOVERNMENT APPROVALS

There is statutory requirement of FSSAI license for setting up of food processing industry. Moreover, MSME & GST registration, IEC Code for Export of end products and local authority clearance may be required for Shops and Establishment, for Fire and Safety requirement and registration for ESI, PF and Labour laws may be required if applicable. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

DISCLAIMER:

This is an indicative illustration of project profile; the above calculation can vary with the locations. 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.

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