PROJECT REPORT

Of

CANNED MUSHROOM

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Canned Mushroom Unit**

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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CANNED MUSHROOM

Introduction

Mushroom a fungus fruit body is considered a delicious food all over the world because of its taste aroma and structure. It is full of nutrients, low in calories, high in proteins, vitamins, Minerals and a rich source of folic acid. It is an alternate choice for weight conscious people and anaemic patients. It has 4.9% protein content which is more than cow milk, green vegetables such as beans etc.

Mushrooms are highly perishable commodity and should be marketed and consumed as should be marketed and consumed as soon as possible after harvest because of their high moisture content (90.92 %) However, its shelf life can be enhanced for a larger period by way of processing. Generally, mushrooms are processed –frozen, dried and canned.

This project profile has been prepared for canning of mushrooms for a 100% Export –oriented unit. The agric us bisporus (white button) type of mushroom is suitable and preferred for commercial canning.

MARKET POTENTIAL

It has been estimated that the export market of canned mushrooms in the world trade is about us $ 1000 million. The world trade of mushroom is expected to reach a staggering figure of us $15 billion by next 5 years. The present global demand of mushroom is about 115000 tonnes per annum. It is also estimated that the gap between the demand and supply in the world market is around 25 lakh tones. The consumption of mushroom is going up at the rate of around 10% in international market. At present, china, Taiwan and Indonesia are the main producers of mushroom products which also capture the major share of world market. Over 50% of the total world production of the mushroom is sold in fresh form, mainly in producers' domestic markets. The balance is processed ie dried, frozen, canned etc. It has also been estimated that 50% of the mushrooms for processing are canned.

BASIS AND PRESUMPTIONS

1 – This project is based on single shift and 300 working days in a year.

2 – To run the unit viably throughout the year, the other fruits and vegetables can be canned with the same machinery and equipments whenever mushroom is not available.

3 – The yield of canned mushroom has been considered as 60% based on fresh mushroom. The drain weight of canned mushroom has been taken as 440 gms. In each A-2-1/2 can.

4 – The cost of machinery and equipments/materials indicated refers to a particular make and the prices are approximate to those prevailing at the time of preparation of this profile.

5 – The cost of packaging forwarding, tax, etc. is taken @ 10% of the cost of machinery and equipments.

6 – The cost of installation and electrification is taken @ 10% of the cost of machinery and equipments.

7 – Non- refundable deposits-project cost trial production, FPO fees, etc. are considered under preoperative expenses.

8 – Depreciation has been taken on 1. Building @5% 2. Plant and machinery @ 20%.

9 – Interest on total capital investment has been taken @14% per annum.

10 – Minimum 40% of the total investment is required as margin money.

11 – Payback period of the project will be 7 years with yearly installments.

12 – Break-even point has been calculated on the full capacity utilization.

13 – For smooth functioning of the unit, it is suggested that unit should have own arrangements for cultivation of mushroom for consistency and regular availability of quality raw materials.

14 – Mushroom cuttings/stems can be utilized for preparation of mushroom pickles and sold in local markets to get additional profit.

TECHNICAL ASPECTS

PROCESS OF MANUFACTURE

White button mushrooms (vagarious bisporus) are preferred over other types of mushrooms for canning. Commercially, mushrooms are canned in brine, the process involves the following steps:

a – PICKING – Mushrooms are picked at button stage (cap. Diameter 2-2.5 cm) by gentle hand twisting. The soil and portion carrying any microbial flora is then cut off/removed with the help of a sharp edge stainless steel knife/blade. The stalk length should preferable be kept 0.5-1 cm. long.

b- SORTING AND GRADING – Diseased, damaged / bruised, shriveled and browned mushrooms are discarded and only the healthy white and tight buttons are selected and separated into two grades i.e. cap. Diameter up to 2.5 cm with compact head as A and cap. Diameter beyond 2.5 cm as B grade.

c- WASHING – Graded mushrooms are thoroughly washed 3-4 times in cold running water to remove adhering dirt, soil etc. without damaging or rubbing them excessively.

d- BLANCHING – To inhibit enzymatic activity, blanching is necessary. It also inactivates micro-organisms and removes the air from the raw materials to achieve a satisfactory and uniform pack.

Mushrooms are blanched in boiling water for 203 minutes followed by immediate cooling in cold water. However, to reduce leaching losses, steam blanching is preferred because the leaching losses in boiling water had been estimated to be about 30 %.

e- FILLING OF CANS – Mushrooms are commercially packed in two can sizes i.e. A-1 tall can A-2.5 A-1 tall cans are preferred by retailers while A-2.5 cans are liked by hoteliers, exporters and other establishments.

The blanched mushrooms are filled into cans with declared drain weight i.e. 440 gms in A-2.5 can.

f- BRINING-

After filling the cans with mushrooms strained hot brine solution of 2 % common salt, 1 % sugar and 0.05% citric acid is added upto the brim of the can. Brining adds flavor to the product, reduces processing time and enhances the shelf life of canned mushrooms.

g- EXHAUSTING

After brining cans are exhausted to remove any entrapped air and other accumulated gases from the product to ensure a longer shelf life.

Cans filled with brine solution are fed to the exhaust box for a specified period of time depending upon the length of exhaust tunnel and size of container. The shorter the tunnel, the longer will be the exhausting can also be performed by placing the filled cans in boiling water till temperature of the centre of can reaches 85 – 90c for 1-2 mts.

h- SEAMING / CAN CLOSING

Immediately after exhausting, cans are sealed with the help of a double seamer to get hermetically sealed container. Sealed cans are then placed in upside down position to sterilize the closed lids.

I – PROCESSING / STERILIZATION

Processing also designated as sterilization, is an indispensable unit operation in canning. This is accomplished by processing the hermetically sealed cans at a pressure of 15 lbs psi for a specified period of time depending upon the size of can and altitude of processing place. However, for areas like shimla, processing time for A-2.5 size cans is recommended to be 45 minutes.

j- COOLING

Cooling of cans is done immediately after sterilization in cold running water to room temperature in order to give an abrupt shock to the micro-organisms to get rid of their adverse activities.

k- LABELLING AND STORAGE

The cooled cans are stored in a cool dry place and smeared with grease to remove any adhering moisture from the can body to avoid rusting. Cans are kept at ambient temperature for 8-10 days to check any swell, leakage, puffing and other disorders before labeling.

Before the cans are exposed for sale, proper labeling is done to meet statutory requirements of fruit products order, 1955 Prevention of Food Adulteration Act, 1954 and packed commodities (Regulation) Act 1975.

PRODUCTION CAPACITY (PER ANNUM)

a – Quantity – 900000 A-2.5 size cans

b – Value – Rs 445.50 lakhs

MOTIVE POWER

30 KW

POLLUTION CONTROL

The entrepreneurs are advised to contact concerned state pollution control board for detailed guidance in the matter.

However, the water effluent in this industry is generated during cleaning, washing, pre-treatment, blanching of raw materials. It is advisable to test the water discharge

as per specifications laid down by the Bureau of Indian Standards. The provision of such treatment has been made in the profile.

ENERGY CONSERVATION

Although the energy requirement is small yet some important points for conservation of energy are given below

1 – In electrical installation appropriate electric motors should be used and properly installed.

2 – There should be no leakage of steam from pipe line.

FINANCIAL ASPECTS

A – FIXED CAPITAL

i LAND AND BUILDING

S.N.	LAND& BUILDING	AREA	RATE IN RS.	AMOUT IN LAKHS
1	Land	1000sq.mtr	@250 sq.mtr	2.50
2	Built up area	700 sq. mtr	@2500sq.mtr	17.50
3	Factory shed	300sq.mtr		
4	Raw material store	100sq.mtr		
5	Finished goods store	100sq.mtr		
6	Others	200sq mtr		
			Total	20.00

ii Machinery & Equipments.

S.NO	DESCRIPTION	QTY	AMOUNT IN LAKHS
1	Ss steel tables size 6" x 3" @ Rs 13,400	2	0.268
2	Washing machine rotary rod washer equipped with spray arrangement, collection tank etc.	1	0.660
3	Blanching equipments consisting of three s.s. tanks each of 380 x 1140 mm complete with two trays of size 1015 mm x 350 mm x 180 mm and top folds trays 30 mm x 12 mm and ss steam coil 25 mm along three sides of tank	1	0.577
4	S.S. titing type exhaust box. Exhaust box tunned	1	0.700
5	Straight line exhaust box. Exhaust box tunnel of 3962 mm long with 2 HP Electric motor with reduction gear boxes to accommodate four cans of A-2.5 size at a time		
6	Canning retorts Size-81 0 x 915 mm and 5 mm thick with dial thermometer, pressure gauge, safety valve, etc. @ Rs 49,200 each	2	0.984
7.	Crates for canning retors @ Rs 6600 each	8	0.528
8.	Can reformer for reforming flattened can body	1	0.505
9.	Flanger with one change part Add!. change part of the above	1	0.538
10.	Flange rectifier	1	0.208
11.	Semi-automatic can seamer AddI. Change part of above	1 1	o.850 o.145

12.	Can end embossing machine AddI. Change part for the above	1 1	1.065 0.180
13.	Water storage tanks (Plastic) Capacity 15 Kl	1	0.500
14	Concrete tank lined with tiles size (8'x8'x3.5')	1	0.200
15.	Steam Boiler (Oil fired) capacity-500 Kgs/hr	1	3.000
16.	Wide mouthed empty plastic container @ Rs 150 each- Capacity 50 Kgs each	100	0.150
17.	Cold storage cap-2 tonnes Area 1500 cu Ft	1	1.500
18.	Can Tester pneumatically have operated with two pressure cylinders and water tanks	1	1.500
19.	(a) Miscellaneous equipments such as buckets, cutting, pealing, knives, Weighing balance Trays, box striping machine, etc. (b) Laboratory equipments such as-weighing balance, dehydrator, etc.	LS LS	0.230 1.000
20.	Pollution Control equipments discharge of water treatment tanks	LS	0.350
		Total	15.264
	Pecking, forwarding C. S. T. and other charges @ 10%		1.526
	Erection and electrification charges @ 1 0%		1.526
	Cost of office equipment Including office Furniture, computers etc		1.000

Total 19.316

(iii) Pre-operative Expenses 0.750

Total fixed Investment (i+ii+iii) 40.066

B. Working capital (per month)

(i) Personnel

FINANCIAL ANALYSIS

1.	Total Recurring Expenditure (per year)	388.680
2.	Depreciation on Building @ 5%	0.875
3.	Depreciation on Machinery and Equipment @ 10%	1.526
4.	Depreciation on Office Furniture, Fixture etc. @ 20%	0.200
5.	Interest on Total Investment @ I 4%	19.213
	Total	410.494

(2) Turnover (per year)

Item	Qty.	Rate	Amount (Rsin Lakhs)
1. canned Mushrooms A-2 ½	9,00,000	55	495.00
2. Commission, Brokerage &. Marketing Expenses		10%	(-)49.50
	Total		445.50

3. Net Profit per year (Rs.in Lakhs) 35.006

4. Net Profit Ratio

$$= \frac{\text{Net Profit (per year) x100}}{\text{Turnover (Per year)}}$$

5. Rate of Return

$$= \frac{\text{Net Profit (per year) x100}}{\text{Total Investment}}$$

(6) Break-even Point

(i) Fixed Cost		Amount (Rs in Lakhs)
(a)	Depreciation on machinery and equipment	1.52
(b)	Depreciation on building	0.87
(c)	Depreciation on office furniture and fixtures	0.20
(d)	Interest on total investment	19.21
(e)	Insurance	0.36
(f)	40% of salary and wages	4.416
(g)	40% of other contingent expenses	1.584
(h)	Power charges	0.360
	Total	28.53

(ii) Net Profit (per annum) Rs. 35.06

$$\text{B.E.P.} = \frac{28.534 \times 100}{63-54}$$

=44.91% Say 45

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