

## **A PROJECT PROFILE FOR MANUFACTURE OF** **NOODLES (Updated)**

<b>QUALITY STANDARD</b>	:	<b>PFA , 1954</b> <b>Relevant ISI Specification are :</b> <b>Makaroni, Spaghetti , Vermicelli, and Egg</b> <b>Noodles ( 2nd Revision ) -IS1485:1993</b>
<b>PRODUCTION CAPACITY</b> <b>QUANTITY (Per Annum)</b>	:	<b>Noodles : 270 MT per Annum</b>
<b>VALUE</b>	:	<b>Rs. 81,00,000/-</b>
<b>MONTH AND YEAR OF PREPARATION:</b>		<b>Dec' 2010</b>
<b>PREPARED BY</b>	:	<b>FOOD DIVISION</b> <b>MSME- DEVELOPMENT INSTITUTE</b> 34, Industrial Estate, Nunhai, AGRA-282 006 Ph. 0562-2280879, 2280882(F) E-mail : dcdi-agra@dcmsme.gov.in

### ***I. Introduction:***

Cereals like wheat , rice, maize and millets are staple food grain for majority of population around the world . These are the rich source of carbohydrates and supply of calorie and other nutrients to the consumers. Apart from value addition by processing to traditional products from these grains , development of Newer products offers Variety, Convenience, Quality, Cost efficiency and Scope for increasing nutritional value. In the developed countries many convenience foods are prepared by extrusion process using extruder, as it offers a large number of desired characteristic to be incorporated in the product. NOODLES are a form of pasta that is becoming extremely popular in India even as Continental and Italian delicacy. Instant Noodles is prepared by means of an extrusion machine that is basically made of an stainless steel make strips, either flat(rolled and Cut ) or Oval round(Extruded). The process is quite simple and requires not much skilled labour. The machine itself is high technology and provides the manufacturers to produce pasta with several alternatives materials ( like Maida, Suji, Rava, Rice flour and so on ) and in different shapes ( like Spaghetti, Fettuccini, Vermicelli, Maccaroni, Fusilli, Penne, etc. ) of Pasta and Noodles. These products can be described as Hard, Brittle pieces, Formed into different shapes by extruding , cutting and drying tough dough made from semolina or farina mixed with water.

### ***II. Market Potential & Scope:***

This type of ready-to-eat food items is very popular in the developed countries because of its versatility of form, composition and ease of preparation at consumer end which has made these products so widely accepted the world over. The popularity of Pasta can be attributed to its sensory appeal, Versatility, Low Cost, ease of preparation , Nutritional content and excellent storage stability as well as increased consumer interest in ethnic foods in the Western world. The inherent blandness of the product makes them congenial with many kinds of adjuncts such as sauces, topping, flavourings , etc. enabling vermicelli Noodles to be used as the basis of different dishes with infinite variations. These dishes are consumed in place of potatoes, rice, bread. Italians are world leaders

in the consumption of products with 25 Kg/head/annum followed by USA at about 8.2 Kg/head. Australians and Japanese consume about 3.5 Kg. And 1.1 Kg /per/head, respectively. Although consumption in India is reported to be very low, viz., 80 Gm/capita, their production has increased in the recent past, from 4.73 lakh tones during 1990 to 6.46 lakh tones in 2001. With having Export Market Noodle are projected to become more popular in many of the Asian countries with increased availability of Western foods and higher disposable incomes. Due to improving standard of living in the cities and the rapid urbanization taking place in the rural areas , consumption of these products is widely expected to go up steadily. At present the market of Noodles , specially in the urban areas, is dominated by brands likes MAGGI & TOP RAMAN. Some medium & Small companies are also engaged in its production . The presence of a demand supply gap can be observed which may leads ample scope for a unit to come up in this product sector to cater especially to the semi urban and rural sectors of north India. Besides the boom in the food service sector including fast food chain, has widened the demand potential for Noodles. Experiments have shown that advertisement and publicity have influenced the pattern of consumption of Noodles/ Pasta products. Besides, Noodles/ Pasta products have good export potential especially in the Middle East/ Europe.

### ***III. Basis & Presumption:***

1. The Project Profile has been prepared on the basis of Single Shift of 8-hrs. a day and 25-working days in a month at 75% efficiency.
2. It is presumed that Ist year, the capacity utilization will be 70% followed by 85% in the next year and 100% in the subsequent year.
3. Depreciation on machinery & equipments has been taken @ 10% minimum . Depreciation on office furniture has been taken @ 20 % per annum.
4. The rates quoted in respect of salaries and wages for skilled worker and others are on the basis of minimum rates in the State of U.P.
5. Interest rate for the fixed and working capital has been taken @ 12% on an average whether financed by the Bankers or Financial Institutional.
6. The margin money required is minimum (30% of the total capital investment).
7. The rental value for the accommodation of office , workshop and other covered area has been taken @ Rs. 30/- per Sq. mtr .
8. The rate quoted in respect of machinery, equipment and raw materials are those prevailing at the time of preparation of the Project Profile and are likely to vary from place to place and suppliers to suppliers. When a tailor made project profile is prepared, necessary changes are to be made.
9. The pay back period may be 5-years after the initial gestation period.
10. The gestation period in implementation of the project may be to the tune of 6 to 9 months which includes making all arrangements, completion of all formalities, market surveys and tie-ups etc. Once all the above arrangements are made and quality/standards achieved the 100% project capacity may be achieved at the end of three years. However, a detailed PERT/CPM/chart with implementation period has been given in the report.
11. To run the unit the balance period of the year, other fruits products such as squashes and juices can be prepared with addition of a few machinery and equipments.

### ***IV. Implementation Schedule:***

The implementation of the project includes various jobs/exercises such as procurement of technical know how, transfer of technology, market surveys and tie-ups, preparation of project report, selection of site, registration, financing of project, procurement of machinery and raw materials etc., recruitment of staff, erection/ commissioning of machines, trial production and commercial production etc. In order to efficiently and successfully implement the project in the shortest period the slack period is curtailed to minimum possible and as far as possible

simultaneous exercises are carried out. In view of above a CPM-PERT Chart has been illustrated below, According to which a minimum period of 227 days is involved in finally starting the project on commercial basis. By following this process a time period of 82 days can be saved.

## Details of Activities

### C.P.M.

Activity	Days	Activity	Days	Particulars of activity
1-2 how/	15	1-2	15	Procurement of Tech. know
3-4	15	3-4	15	transfer of technology. Market survey, tie up and obtaining quotations.
4-5	7	2-3	7	Selection of site.
5-6	70	4-5	7	Preparation of Project report
6-7	45	5-6	70	Registration and financing.
7-10	30	6-7	45	Placement of orders for machinery and receipt of machines.
10-11	30	6-8	30	Recruitment of staff and training
11-12	15	6-9	30	Addition/Alteration in rental premises
		8-10	15	Procurement of raw material/ Bought out components
		7-10	30	Erection, Electrification and Commissioning
		10-11	30	Trial Production
		11-12	15	Commercial Production
		<b>227 days</b>	<b>309 days</b>	

## V. Technical Aspect

### a. Manufacturing Process:

#### Process outline:

Noodles is the term being used to designate products made from blend of flour , the major component of which is rice flour, buck wheat flour , wheat flour, and from bean , potato , mung bean and corn starch. The major manufacturing process is depend on the presence of absence of gluten. Small amounts of nutrients may be added but these do not affect the organoleptic qualities or processing properties of the material. Water is added in the extrusion step and is removed by drying , except when it is sold as fresh product. Wheat flour noodles are usually produced by sheeting and rolling , while other types are typically produced by extrusion or batter cooking methods. The raw material for Rice noodles is non-glutinous rice which is elastic and enables formation of dough that is easy for extrusion. The Traditional noodles have been modernized and globalised in the form of Instant Noodles. Both rice and

wheat flour type instant noodles are steamed and dried or steamed and fried after the cutting stage. The modern instant noodle are steamed and fried in Hydrogenated Vegetable Oil , have a fat content of about 20% and added salt and edible gum and a Shelf Life of 6-8 Month. Instant noodles are fast cooking , needing 2-3 minute boiling or re-hydration in boiling water. Noodles I manufactured in different size , Hollow as well as solid . The flavour and taste in the instant noodle is created during the re-hydration in boiling water by adding a mix known as Tastemaker of different flavour and taste having hydrolyzed vegetable protein, Sugar, spices, onion powder, edible starch, oil, citric acid, caramel and salt and added flavour.

#### ***b. Quality Control & Standards:***

The Bureau of Indian Standards has laid down the following specifications for Noodles:

**Makaroni, Spaghetti , Vermicelli, and Egg Noodles ( 2nd Revision ) - IS 1485 : 1993**

The details of specification can be obtained from the Bureau of Indian Standards, Manak Bhawan, 9, Bahadur Shah Zafar Marg , New Delhi-110 002.

The ISO 9000 series, IS 14000 series of European Norm series standards promises a team work which may guide the entrepreneurs towards fulfillment of a commitment for quality of products.

#### ***c. Pollution Control:***

There is no major pollution problem associated with the project. The entrepreneurs may however, contact the concerned State Pollution Control Board for detailed guidance in the matter. Minimum height of shed will be maintained with exhaust fans should be installed for removing decongestion proper ventilation, etc.

#### ***d. Process Flow Chart For the preparation of Noodles***

#### ***e. Production (Target & Value):***

<b>NOODLES</b>	:	<b>270 MT</b>
<b>VALUE</b>	:	<b>Rs. 81,00,000/-</b>

<b>f. Power Requirement</b>	:	<b>10K.W.</b>
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<b>g. Water</b>	:	<b>10,000 Ltrs./Day</b>
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#### ***h. Energy Conservation:***

The following steps may be taken for the conservation of energy.

1. Machinery & Equipment's parts, which are revolving and reciprocating should be properly, lubricated from time to time with suitable lubricant oil.
2. Lay out of the unit should be in such a way in that no back tracking of material is there.
3. All electric switches may be kept off, when not required.
4. The entire transmission belt will be tightened before starting the work is wherever applicable.
5. Fluorescent tube with electronic Chokes may be used for energy saving. Further recently developed compact fluorescent tubes called (CFT) of 10,15, watts Philips/Glaux made may be used for energy saving and decoration. These self ballasted fluorescent lamps are high efficiency replacements for ordinary bulbs. For same light output, CFLEBs consume about one-fifth the

power consumed by ordinary bulbs, thereby saving a lot of energy. The savings get further multiplied when CLEBs are used in air conditioned areas, since the saving of energy by using CLEBs also corresponds to less heat dissipation reducing load on air conditioners. The life of CFLEBs is about 8000/10000 hours i.e. about 10 times that of ordinary bulb.

The typical payback period in terms of savings of energy bills and cost of ordinary lamps is about 6 months operation. Unlike ordinary bulbs, these CFLEBs provide choice of three colours designated A, B & C, to suit individual requirements.

Electronic Ballast, with protection against high voltage spikes, along with high quality CFLs make these composite CFLEBs (or self ballasted CFLs) Slim, lightweight, efficient and reliable units.

6. As far as possible Solar Energy and day light will be used keeping all the other lights off.
7. As far as possible inductive load of motor will be reduced and high power factor will be used with the aid of capacitors of appropriate sizes.

## **VI. Financial Aspects:**

### **(A) Fixed Capital:**

#### **1. Land and Building (own) :**

Land and Building (rented)

On Rent @ Rs.50 /-Sq. meter

Covered Area 200 Sq. meter

**10,000/-**

#### **2. Machinery and equipment:**

S.No.	Description HP/KW Ind/Imp.	Qty.	Value (Rs)
<b><u>Production Unit</u></b>			
	<b><u>Name of machine with specification</u></b>		
1.	Steam Baby boiler 50 kg/hr.	1	90,000
2.	Vertical type Powder Mixer 500 Kg Cap. with motor complete	1	40,000
3.	Dough Maker blade type 100 Kg. Cap.	1	60,000
4.	Noodle Making Extrusion machine cap. 150 Kg./Hr. power operated with Die-Head of diff. Sizes with motor	1	8,50,000
5.	Tray Dryer with power operated	1	1,50,000
6.	Tray- wooden 100 2'x3'	100	30,000
7.	Utensils i.e. Bucket, plate, mugs etc.	L.S.	10,000
8.	Water storage tank cap.500 lit. (HDPE)	10	5,000
9.	Weighing balance 100 gm to 5 kg cap.	2	10,000
10.	Weighing Scales Platform type	1	15,000
11.	Working Tables Al Top	2	15,000
12.	Packaging Machine Pouch Pack	1	60,000
13.	Laboratory equipt.	L.S.	30,000
14.	Pollution Control Equip.	L.S	20,000
15.	Office furniture and fixtures		20,000
16.	Electrification & installation charges @ 5%		<u>60,000</u>

**Total Cost of Machinery & Equipments**

**14,65,000/-**

#### **3. Pre-Operative Expenses:**

**25,000/-**

**Total Fixed Capital ( 1+2+3)**

**15,00,000/-**

**(B) Working Capital (Per month)**

**(1 ) Staff and Labour (per month):**

S.No.	Description	No.	Salary	Total Value (Rs.)
<b>(a)</b>	<b>Administrative &amp; Supervisory</b>			
i)	Production Manager	one	8000/-	8,000/-
ii)	storekeeper	one	4000/-	4,000/-
iii)	Accountant	one	3000/-	3,000/-
iv)	Salesman	three	3000/-	9,000/-
v)	Peon/watchman	two	2000/-	4,000/-
vi)	Sweeper	one	1500/-	1,500/-
<b>(b)</b>	<b>Technical Skilled &amp; Unskilled</b>			
i)	Food Technologist	one	7000/-	7,000/-
ii)	Supervisor	one	5000/-	5,000/-
iii)	Foreman / Mechanic	one	3000/-	3,000/-
iv)	Skilled Worker/Boiler man	three	3000/-	9,000/-
v)	Helper	three	2000/-	6,000/-
<b>TOTAL</b>				<b>59,500/-</b>
Perquisites @ 15 %				9,000/-
<b>Total</b>				<b>68,500/-</b>

**(2) Raw Material (per month):**

S.No.	Description with specification	Qty.	Rate	Value (Rs.)
1.	Wheat Flour / Maida	22500 kg	Rs.15/kg	3,37,500
2.	Sugar/ Common salt	L.S		10,000
3.	Spices,garlic, ginger,etc.	L.S.		5,000
4.	Colour/Sodium Bicarbonate	L.S.		2,000
5.	Packaging Material	112500 pouch/200gm.	Rs.0.25/-	30,000
6.	Corrugated box	1150	Rs.6/-	7,000
7.	Miscellaneous			<u>20,000</u>
				<b>4,11,500/-</b>

**(3) Utilities (per month):**

Power		
Total connected load including light		<b>10 KW</b>
assuming 8 Hours operation KWH		
Consumption per month @ 3.5	8x10x25x3.5	7,000
Water	L.S.	2,000
Boiler fuel		<u>5,000</u>
		<b>14,000/-</b>

**(4) Other Expenditure (per month):**

1.	Postage & Stationary	2,000/-
2.	Advertisement	10,000/-
3.	Telephone	1,000/-
4.	Repair & Maintenance	2,000/-
5.	Transportation	10,000/-
6.	Consumable	2,000/-
7.	Sales expenses	4,000/-
8.	Insurance	2,000/-
9.	Misc. Expenses	<u>3,000/-</u>
<b>Total:</b>		<b>36,000/-</b>

**Total Recurring Expenditure (per month):**

1) Salary & Wages	68,500/-
2) Raw Material	4,11,500/-
3) Utilities	14,000/-
4) Other Contingent Expenses	36,000/-
<b>Total:</b>	<b>5,30,000/-</b>

**Working Capital for three months:****16,50,000/-****Total Capital Investment:**

Fixed capital:	15,00,000/-
Working capital for 3 months:	16,50,000/-

**Total: 31,50,000/-****VII. MACHINERY UTILIZATION:**

In this process of tomato products, the bottle neck operation is preparation of tomato juice. Efforts should be so made that all machinery and equipments are properly serviced at regular intervals for maximum utilization of machines as the process involves some manual operation also. It is expected that during first year machine utilization will be 75% and during second year 85% and 100% in subsequent years.

**VIII. FINANCIAL ANALYSIS:****1. Cost of Production (per annum):**

Total Recurring Cost per year	63,60,000/-
Depreciation on Machinery & Equipment @ 10%	1,20,000/-
Depreciation on Office Equipments & furniture @ 20%	2,000/-
Interest on Total Capital Investment @ 12 %	3,78,000/-
<b>Total:</b>	<b>68,78,000/-</b>

**2. Turn Over (per annum):**

<u>Item</u>	<u>cap.</u>	<u>Per month</u>	<u>Per annum</u>	<u>Rate</u>	<u>Value</u>
Noodles Pouch	200 Gm.	112500	1350000	6 /- packet	81,00,000/-
<b>So Net Sales Realization(turn over) per Year :</b>					<b>81,00,000/-</b>

**3. Net Profit per annum before Income Tax :** **12,22,000/-**  
(Sales- cost of production)

**4. Net Profit Ratio:** 
$$= \frac{\text{Net profit} \times 100}{\text{Turn over}}$$
  
$$= \frac{12,22,000 \times 100}{81,00,000}$$
  
**= 15.09%**

**5. Rate of Return:** 
$$= \frac{\text{Net profit} \times 100}{\text{Total investment}}$$
  
$$= \frac{12,22,000 \times 100}{31,50,000}$$
  
**= 38.79%**

## ***XI. BREAK EVEN ANALYSIS:***

### ***(1) Fixed Cost (per annum)***

(a) Total Depreciation (on m/c. & equipment, dies, tools, furniture):	1,40,000/-
(b) Rent:	1,20,000/-
(c) Interest on borrowing:( Total Investment):	3,78,000/-
(d) Insurance:	24,000/-
(e) 40% of salary:	3,28,800/-
(f) 40% other contingent exp. without insurance	<u>1,63,200/-</u>
<b>Total:</b>	<b>11,54,000/-</b>

### ***(2). Break Even Point (B.E.P)***

$$\begin{aligned} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed cost} + \text{profit}} \\ &= \frac{11,54,000 \times 100}{11,54,000 + 12,22,000} \\ &= \mathbf{48.56\%} \end{aligned}$$

## ***X. LIST OF MACHINERY & RAW MATERIAL SUPPLIERS:***

1. M/s. Jogindra Engg Works Pvt. Ltd. ( For Pasta/ Noodle Producing Machine )  
70, Rama Road , New Delhi-110 015
2. M/s. Modern Packaging System,  
3A , Garstin Place, 7<sup>th</sup> Floor, Kolkata-700 001
3. M/s. Hyderabad Tulaman Limited,  
9-1-87, Sarojini Devi Road, Secunderabad-500 025. Tel: 7701369, Telex & Fax : 7702845.
4. M/s. Kalpana Boilers, 18, Kailash Park, Chirag Nager,  
L.B. Shastri Marg, Chatkopar (W), Mumbai-36.
5. M/s. Urjex Industries, S-26, Indl . Estate, Partapur,  
Meerut-250102(UP).
6. Aroras Box & Cartons Pvt Ltd.  
39<sup>th</sup> K.M. , Delhi-Jaipur Road (N.H.No.8), Gurgaon-122 001(Haryana)
7. Jain Packaing Products  
33, Sarai Pipal Thala, Behind Mangat Ram Dal Mill, Subzi Mandi , Azadpur, Delhi-110033
8. Ambica Packers & Printers  
2687, Kinari Bazar, Dariba Kalan, Delhi-110 006
9. Control Print (India) Ltd., A-27, Swasthya Vihar, Vikas Marg, Delhi-110 092
10. Asian Packaging Machinery, 1/1142, Baba Nagar , Old Faridabad
11. Fine Organic Industries, Fine House, Anandji Street, Opp. M. G. Road, Ghatkopar(E), Mumbai-77

### **ADDRESSES OF RAW MATERIAL SUPPLIERS:**

Local dealers.

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