

INSTANT NOODLES, VERMICELLI & SPAGHETTI PLANT

1. 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 labor. 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.

2. PRODUCT & ITS APPLICATION:

Spaghetti: Spaghetti (Italian pronunciation: [spa'getti]) is a long, thin, cylindrical, solid pasta. It is a staple food of traditional Italian cuisine. Like other pasta, spaghetti is made of milled wheat and water. Italian spaghetti is made from durum wheat semolina, but elsewhere it may be made with other kinds of flour.

Originally spaghetti was notably long, but shorter lengths gained in popularity during the latter half of the 20th century and now spaghetti is most commonly available in 25–30 cm (10–12 in) lengths. A variety of pasta dishes are based on it.

Vermicelli: Vermicelli is a traditional type of pasta round in section similar to spaghetti. In Italy vermicelli is slightly thicker than spaghetti, but in the United States it is instead slightly thinner. Vermicelli is very fine, long strands of pasta – like a skinny spaghetti – often used in soups. The name means ‘little worms’ in Italian (though in America, it is described more ethereally ‘angel hair’ pasta). It is available fresh or dried.

Instant Noodles: Instant noodles are sold in a precooked and dried noodle block, with flavoring powder and/or seasoning oil. The flavoring is usually in a separate packet, although in the case of cup noodles the flavoring is often loose in the cup. Some instant noodle products are seal packed; these can be reheated or eaten straight from the packet/container. Dried noodle blocks are cooked or soaked in boiling water before eating. The main ingredients used in dried noodles are usually wheat flour, palm oil and salt. Common ingredients in the flavoring powder are salt, monosodium glutamate, seasoning, and sugar. The dried noodle block was originally created by flash frying cooked noodles, and this is still the main method used in Asian countries, but air-dried noodle blocks are favored in Western countries.

Instant noodles are made from wheat flour, starch, water, salt or kan sui (an alkaline salt mixture of sodium carbonate, potassium carbonate, and sodium phosphate), and other ingredients that improve the texture and flavor of noodles. Other flours may be mixed with wheat flour to make specific types of instant noodles; for example, buckwheat flour is added at 10-40% of wheat flour in the production of buckwheat noodles or soba. The popular noodles include instant

Chinese noodles, instant Japanese noodles, and instant European style noodles, which vary in the basic ingredients used to make the noodles. Instant Chinese noodles use kan sui, whereas instant Japanese noodles do not, and the European style noodles often are made with semolina (a coarse ground product of durum wheat).

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Do not require any specific qualification.

4. INDUSTRY LOOKOUT AND TRENDS

The detailed analysis on the Noodles and Spaghetti consumption trends in India shows the historic and forecast Noodles and Spaghetti consumption volumes and values at market and category level. It also provides indispensable data on brand share, distribution channels, profiles of companies active in the global Noodles and Spaghetti market along with latest industry news, in addition to mergers & acquisitions. This report brings together Canadean Intelligence's research, modeling, and analysis expertise in order to develop uniquely detailed market data. This allows domestic and foreign companies to identify the market dynamics to account for Noodles and Spaghetti sales overall and to know which categories and segments are showing growth in the coming years.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:

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 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, flavorings, 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 followed by USA. Although consumption in India is reported to be very low, their production has increased in the recent past. 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, especially 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.

6. RAW MATERIAL REQUIREMENTS:

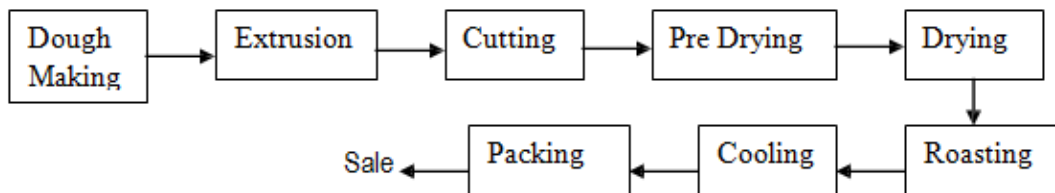
Vermicelli and Spaghetti is produced from wheat flour (Maida). For Macaroni samoling (suji) is the principal raw material. Both these are readily available in the local market. Polythene Bags and Cartoons are also locally available. The annual requirements of raw materials at the installed capacity and costs are shown below:

Sr No.	Raw/Packing Material	Annual Requirement
1	Wheat Flour (Maida)	55000 Kg
2	Samolina (Suji)	78000 Kg
3	Packing Material	

7. MANUFACTURING PROCESS:

Flour or samoline is mixed with water and kneaded in motorized mixer. The dough is then fed to the extrusion press with proper die. For vermicelli the extruded dough comes out in the shape of long rods. These are cut at pre-specified length and received on wooden sticks. These are cut at pre-specified length and received on wooden sticks. These are dried for 4 to 6 hours at 60°C temperature in cabinet drier. For macaroni also dough is extruded through dies cut at pre-specified length. The raw macaroni so obtained are received on sieves on which a Hot Air blower partially drives the macaroni to prevent formation of clumps. These partially dried macaroni are dried in a cabinet drier for 4 hours. Dried macaroni are dried in a cabinet drier for 4 hours. Dried macaroni is roasted & cooled. Vermicelli and Macaroni so produced are tested weighed and packed in Food -Grade polythene bags. These are then repacked in Corrugated Cardboard Boxes for sales.

Process Flow:



8. MANPOWER REQUIREMENT:

The enterprise requires 18 employees as detailed below:

Sr. No.	Designation of Employees	Salary Per Person	Monthly Salary	Number of employees required				
				Year-1	Year-2	Year-3	Year-4	Year-5
1	Un Skilled Workers	5,000	15,000	3	3	3	3	3
2	Mechanic cum Electrician	8,000	32,000	4	4	4	4	4

3	Accountant	12,000	12,000	1	1	1	1	1
4	Store Keeper	8,000	8,000	1	1	1	1	1
5	Sales Supervisor	12,000	12,000	1	1	1	1	1
6	Security Personnel	6,500	6,500	1	1	1	1	1
7	Office Staff	6,000	18,000	3	3	3	3	3
8	Manager	20,000	20,000	1	1	1	1	1
9	Skilled Labour	10,000	10,000	3	3	3	3	3
	Total		123,500	18	18	18	18	18

9. IMPLEMENTATION SCHEDULE:

The project can be implemented in 13 months' time as detailed below:

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	3.00
2	Construction (if applicable)	5.00
3	Procurement & installation of Plant & Machinery	2.00
4	Arrangement of Finance	2.00
5	Recruitment of required manpower	1.00
	Total time required (some activities shall run concurrently)	13.00

10. COST OF PROJECT:

The project shall cost INR 225.46 lacs as detailed below:

Sr. No.	Particulars	INR in Lacs
1	Land	7.50
2	Building	3.20
3	Plant & Machinery	4.02
4	Furniture, Electrical Installations	1.00
5	Other Assets including Preliminary / Pre-operative expenses	0.40

6	Margin for Working Capital	209.34
	Total	225.46

11. MEANS OF FINANCE:

Bank term loans are assumed @ 60% of fixed assets. The proposed funding pattern is as under:

Sr. No.	Particulars	INR in Lacs
1	Promoter's contribution	123.66
2	Bank Finance	101.80
	Total	225.46

12. WORKING CAPITAL CALCULATION:

The project requires working capital of INR 478.50 lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories	239.25	0.25	59.81	179.44
2	Receivables	119.63	0.25	29.91	89.72
3	Overheads	119.63	100%	119.63	0.00
4	Creditors	-		0.00	0.00
	Total	478.50		209.34	269.16

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T OF MACHINERY REQUIRED:

A detail of important machinery is given below:

Sr. No.	Particulars	UOM	Qty	Rate (INR)	Value
					(INR in Lacs)
1	Platform Weighing Balance		1	INR 18,000.00	INR 18,000.00
2	50 kg. Capacity mixer with accessories		1	INR 42,000.00	INR 42,000.00

3	Two 50 kg capacity extrusion press		1	INR 120,000.00	120000
4	One Host Air Blower		1	INR 42,000.00	INR 42,000.00
5	One thermostatically controlled cabinet drier		1	INR 120,000.00	INR 120,000.00
6	Trays, bins, etc. miscellaneous tools & equipments		1	INR 60,000.00	INR 60,000.00
Sr. No.	Particulars	UO M	Qty	Rate (INR)	Value
	<i>sub-total Plant & Machinery</i>			INR 402,000.00	4.02
	Furniture / Electrical installations				
a)	Office furniture	LS	1	50000	0.50
b)	Stores Almira	LS	1	0	0.00
c)	Computer & Printer	L. S.	1	50000	0.50
	<i>sub total</i>				1.00
	Other Assets				
a)	preliminary and preoperative				0.40
	<i>sub-total Other Assets</i>				0.40
	Total				5.42

All the machines and equipments are available from local manufacturers. The entrepreneur needs to ensure proper selection of product mix and proper type of machines and tooling to have modern and flexible designs. It may be worthwhile to look at reconditioned imported machines, dies and tooling. Some of the machinery and dies and tooling suppliers are listed here below:

1. Fry-Tech Food Equipments Private Limited
S. No. 4, Raviraj Industrial Estate,
Bhikhubhai Mukhi Ka Kuwa Bharwadvash,
Ramol, Ahmedabad - 380024,
Gujarat, India
2. Hindustan Vibrotech Pvt. Ltd.
Office No. 2, Ground Floor,
Vrindavan Building, Vile Parle East,

Mumbai - 400057,
Maharashtra, India

3. Electrons cooling systems Pvt. Ltd.

S-27, SIDCO Industrial Estate
Kakkalur Industrial Estate
Tiruvallur - 602003,
Tamil Nadu, India

4. Springboard Enterprises India Ltd.

1st, 2nd & 3rd Floor,
Plot No. 7, 8 & 9,
Garg Shopping Mall,
Service Centre, Rohini Sector 2
New Delhi - 110085,
Delhi, India

5. Flour Tech Engineers Private Limited

Plot No. 182, Sector 24,
Faridabad - 121005,
Haryana, India

6. P Square Technologies

3, Swami Mahal,
Gurunanak Nagar,
Off. Shankarsheth Road Bhavani Peth,
Pune - 411002,
Maharashtra, India

7. Ricon Engineers

10 To 13, Bhagwati Estate,
Near Amraiwadi Torrent Power,
Behind Uttam Dairy,

Rakhial, Ahmedabad - 380023,
Gujarat, India

8. Kamdhenu Agro Machinery
Plot No. 6, Near Power House,
Wathoda Road Wathoda,
Nagpur - 440035,
Maharashtra, India

14. PROFITABILITY CALCULATIONS:

Sr. No.	Particulars	UOM	Year-1	Year-2	Year-3	Year-4	Year-5
1	Capacity Utilization	%	60%	70%	80%	90%	100%
2	Sales	INR In Lacs	1267.2 0	1478.4 0	1689.6 0	1900.8 0	2112.0 0
3	Raw Materials & Other direct inputs	INR In Lacs	1153.6 2	1345.8 9	1538.1 6	1730.4 3	1922.7 0
4	Gross Margin	INR In Lacs	113.58	132.51	151.44	170.37	189.30
5	Overheads except interest	INR In Lacs	18.18	19.31	21.58	22.27	22.72
6	Interest @ 10 %	INR In Lacs	37.10	37.10	24.73	18.55	14.84
7	Depreciation @ 30 %	INR In Lacs	2.81	2.01	1.41	1.01	0.90
8	Net Profit before tax	INR In Lacs	55.49	74.09	103.7 2	128.5 5	150.8 4

The basis of profitability calculation:

This unit will have 1200 MT/Annum capacity. The growth of selling capacity will be increased 10% per year. (This is assumed by various analysis and study, it can be increased according to the selling strategy.)

Energy Costs are considered at Rs 7 per Kwh and fuel cost is considered at Rs. 65 per litre. The depreciation of plant is taken at 10-12 % and Interest costs are taken at 14 -15 % depending on type of industry.

15. BREAKEVEN ANALYSIS:

The project shall reach cash break-even at 19.84% of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
1	Sales at full capacity	₹. In Lacs	2112.00
2	Variable costs	₹. In Lacs	1922.70
3	Fixed costs incl. interest	₹. In Lacs	37.56
4	$BEP = FC/(SR-VC) \times 100 =$	% of capacity	19.84%

16. STATUTORY / GOVERNMENT APPROVALS

The Ministry of Food Processing Industries has been operating several plan schemes for the development of processed food sector in the country during the 10th Plan. One of the schemes relates to the Technology Up-gradation/ Establishment/ Modernization of food processing industries.

The Indian food processing industry is regulated by several laws which govern the aspects of sanitation, licensing and other necessary permits that are required to start up and run a food business. The legislation that dealt with food safety in India was the Prevention of Food Adulteration Act, 1954 (hereinafter referred to as "**PFA**"). The PFA had been in place for over five decades and there was a need for change due to varied reasons which include the changing requirements of our food industry. The act brought into force in place of the PFA is the Food Safety and Standards Act, 2006 (hereinafter referred to as "**FSSA**") that overrides all other food related laws.

FSSA initiates harmonization of India's food regulations as per international standards. It establishes a new national regulatory body, the Food Safety and Standards Authority of India (hereinafter referred to as "**FSSAI**"), to develop science based standards for food and to regulate and monitor the manufacture,

processing, storage, distribution, sale and import of food so as to ensure the availability of safe and wholesome food for human consumption. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

All food imports will therefore be subject to the provisions of the FSSA and rules and regulations which as notified by the Government on 5th of August 2011 will be applicable.

Key Regulations of FSSA

- A. Packaging and Labelling
- B. Signage and Customer Notices
- C. Licensing Registration and Health and Sanitary Permits

17. BACKWARD AND FORWARD INTEGRATIONS

The objective of the scheme is to provide effective and seamless backward and forward integration for processed food industry by plugging the gaps in supply chain in terms of availability of raw material and linkages with the market. Under the scheme, financial assistance is provided for setting up of primary processing centres/ collection centres at farm gate and modern retail outlets at the front end along with connectivity through insulated/ refrigerated transport.

The Scheme is applicable to perishable horticulture and non-horticulture produce such as, fruits, vegetables, dairy products, meat, poultry, fish, Ready to Cook Food Products, Honey, Coconut, Spices, Mushroom, Retails Shops for Perishable Food Products etc. The Scheme would enable linking of farmers to processors and the market for ensuring remunerative prices for agri produce.

The scheme is implemented by agencies/ organizations such as Govt./ PSUs/ Joint Ventures/ NGOs/ Cooperatives/ SHGs / FPOs / Private Sector / individuals etc.

Backward Linkage:

- Integrated Pack-house(s) (with mechanized sorting & grading line/ packing line/ waxing line/ staging cold rooms/cold storage, etc.)
- Pre Cooling Unit(s)/ Chillers
- Reefer boats
- Machinery & equipment for minimal processing and/or value addition such as cutting, dicing, slicing, pickling, drying, pulping, canning, waxing, etc.
- Machinery & equipment for packing/ packaging.

Forward Linkage:

- Retail chain of outlets including facilities such as frozen storage/ deep freezers/ refrigerated display cabinets/cold room/ chillers/ packing/ packaging, etc.
- Distribution centre associated with the retail chain of outlets with facilities like cold room/ cold storage/ ripening chamber.

18. TRAINING CENTERS AND COURSES

There are few specialized Institutes provide degree certification in Food Technology, few most famous and authenticate Institutions are as follows:

1. Indian Institute of Food Science & Technology,
Plot No.1, Near Maa-Baap ki Dargah,Opp to Nath Seeds,
Paithan Road Aurangabad
Aurangabad - 431005
Maharashtra, India

2. MIT College of Food Technology, Pune
Gate.No.140, Raj Baugh Educational Complex,
Pune Solapur Highway,
Loni Kalbhor, Pune - 412201
Maharashtra, India

3. CSIR - Central Food Technological Research Institute (CFTRI)
Cheluvamba Mansion, Opp. Railway Museum,
Devaraja Mohalla, CFTRI Campus, Kjjihundi, Mysuru
Karnataka - 570020

Udyamimitra portal (link : www.udyamimitra.in) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Entrepreneurship program helps to run business successfully is also available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates all over India.

Disclaimer:

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.

Source:- Udyami Mitra/Sidbi