SOYA NUGGETS

1. INTRODUCTION:

Soya bean nuggets arenormallyknown as vegetarian meat. The reason behind the same is because it possesses similar properties like original meat. Soya bean is a rich source of protein and among all vegetarian food products; it has highest level of protein (50%).It is prepared from defatted (DOC) soya flour by the process of extrusion cooking. Though soyabean is mostly produced in Madhya Pradesh but now days, states like Chhattisgarh, Gujarat, and West Bengal are also producing in good quantities.

2. PRODUCT & ITS APPLICATION:

Soya Nuggets are as good as original meat. They possess similar properties in terms protein content. They are also similar chewy characteristics on soaking in water. Also, they are free from cholesterol, and thus heavily used as meat substitutes. These nuggets can be used in preparing various food products in households as well as in restaurants and can be important because of its high nutritional value.

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Successful running this project does not require any specific qualification.

4. INDUSTRY LOOKOUT AND TRENDS

Soybean meal is segmented on the basis of the raw material as Organic and inorganic. Due to rising health concerns people prefer organic soybean meals as organic products are good for health.

Soybean meal market is segmented on the basis of process of production as normal soybean meal, De-hulled [min 50% protein] Hipro Soybean meal, and De-hulled [min. 48% protein] Hipro Soybean meal, Defatted soya flour toasted, and de-fatted soya flakes toasted are available in the market. Normal soybean meal has low protein content than the De-hulled soybean meal which has around 45-46% of crude protein content. Hulls are by-product, therefore, are removed as they have no place in human food but are used for ruminants.

Soybean meal is segmented on the basis of application in food industry, beverage, dietary supplements, and healthcare products. In food market segment soymeal can be used for making soy-chunks and soy-granules. Flour of deflated soy is used to make nutritious biscuits. Isolates of protein from soymeal are used as protein drinks. Product from soymeal are healthy and nutritious thus market demand from food and beverage market segments is high. In healthcare products market segment, soymeal is used to make products having isoflavones which have chemical similarity to estrogen. Demand from dietary supplement market segment is higher as soymeal is used to make calcium, magnesium, iron, and folic acid rich supplements.

Soybean meal is segmented on the basis of distribution channel as supermarket, specialized stores, online stores and retail stores. Online stores are the most preferred mode of shopping for consumer and manufacturer as it is comfortable for both. Supermarkets also have gained good consumer base in last 10 years and are expected to grow at a significant rate.

Soybean meal is the highly nutritive meal for the farm animals; it is used as a feed for the farm animals like chicks, horse, sheep, pig, and fish. It has high protein content which is important for the health of the animals; it is the most used feed for livestock. It has been used as a standard for comparing the protein content of food products. It is approved in the United States as an ideal feed for livestock and its production has increased due to control over slaughterhouse by-product as feed and encouraged the use of soybean meal due to high protein content it has and thus, increase in demand as protein-rich source for livestock feed. Soybean meal market is forecasted to grow at the significant growth rate over near future due to its extremely high protein content which is around 47-49% of protein content and other nutritional contents like crude fibre.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:

Soya bean being the principal corps in western and central parts of Madhya Pradesh, there is good amount of raw materials available for soya nuggets manufacturing. Setting up a plant in or near Madhya Pradesh can help in saving lot of transportation cost as well. Soya Nuggets with high quality and hygienically processing can be essential for preparing various gravies, curries, pulao, biryani etc. as it blends very well with both meat as well as vegetables. With implementation various food standards such as FSSAI, FSMS, ISI and ISO standards, there can be huge market growth for manufacturer for packed soya nuggets.

6. RAW MATERIAL REQUIREMENTS:

Defatted Soya flour is basic raw material required to prepare soya nuggets.For packing, HDPE Bag with inner liners (food grade) are required and to pack those bags for transportation in bulk, cardboard boxes are required.

7. MANUFACTURING PROCESS:

The ingredients comprising high protein dispersible defatted soya flour and water are extruded in the cooker extruder. The product obtained is in the form of small round balls with a moisture content of 17 - 18%. It is taken to the drier by a belt conveyer system where the product is dried at 100 to 105 degrees centigrade for 20 to 25 minutes. In the drier the moisture content reduces to 8%. From the drier the product is conveyed to the grader where grading takes place according to the size of the chunks. The product is then packed in consumer packs of 100 grams or in bulk of 20 kilograms in HDPE bags depending upon the market requirement.

8. MANPOWER REQUIREMENT:

The enterprise requires 14employees 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
	Variable Labour: Workers							
1	Operator	₹ 10,000.00	₹ 10,000.00	2	2	2	3	3
2	Un Skilled Workers	₹ 8,000.00	₹ 24,000.00	5	5	5	8	8
	sub-total		₹ 34,000.00	7	7	7	11	11
	Fixed Staff:							
1	Accountant	₹ 12,000.00	₹ 12,000.00	1	1	1	1	1
2	Store Keeper	₹ 8,000.00	₹ 8,000.00	2	2	2	4	4
3	Sales Staff	₹ 12,000.00	₹ 24,000.00	4	4	4	6	6
	sub-total		₹ 44,000.00	7	7	7	11	11
	Total		₹ 78,000.00	14	14	14	22	22

9. IMPLEMENTATION SCHEDULE:

The project can be implemented in 9months' time as detailed below:

Sr. No.	Activity	Time Required *(in months)*
1	Acquisition of premises	2.00
2	Construction (if applicable)	2.50
3	Procurement & installation of Plant & Machinery	2.50
4	Arrangement of Finance	1.00
5	Recruitment of required manpower	1.00
	Total time required *(some activities shall run concurrently)*	9.00

10. COST OF PROJECT:

The project shall cost ₹ 71.43lacs as detailed below:

Sr. No.	Particulars	₹ in Lacs
1	Land	5.00
2	Building	3.50
3	Plant & Machinery	13.80
4	Furniture, other Misc.Equipments	0.50
5	Other Assets including Preliminary / Pre-operative expenses	1.38
6	Margin for Working Capital	47.25
	Total	**71.43**

11. MEANS OF FINANCE:

Bank term loans are assumed @ 75% of project cost. The proposed funding pattern is as under:

Sr. No.	Particulars	₹ in Lacs
1	Promoter's contribution	17.86
2	Bank Finance	53.57
	Total	**71.43**

12. WORKING CAPITAL CALCULATION:

The project requires working capital of ₹47.25lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories	23.63	0.25	5.91	17.72
2	Receivables	11.81	0.25	2.95	8.86
3	Overheads	11.81	100%	11.81	0.00
4	Creditors	-		0.00	0.00
	Total	47.25		20.67	26.58

13. LIST OF MACHINERY REQUIRED:

A detail of important machinery is given below:

Sr. No.	Particulars	UOM	Qtty	Rate (₹ in Lacs)	Value(₹ in Lacs)
	Plant & Machinery / equipments				
a)	***Main Machinery***				
1	Screw Mixer	Nos	1	₹ 1.20	₹ 1.20
2	Flour Sifter	Nos	1	₹ 0.55	₹ 0.55
3	Extruder	Nos	1	₹ 6.50	₹ 6.50
4	Water Dosing System	Nos	1	₹ 0.25	₹ 0.25
5	Hot Air Drier	Nos	1	₹ 0.80	₹ 0.80
6	Grader	Nos	1	₹ 0.95	₹ 0.95
7	Filling, Sealing and Packing Machine	Nos	1	₹ 2.00	₹ 2.00
8	Weighing Scale	Nos	1	₹ 0.20	₹ 0.20
9	Material Handling Equipment	LS		₹ 0.85	₹ 0.85
10	Misc. Tools	LS		₹ 0.50	₹ 0.50
	sub-total Plant & Machinery				**₹ 13.80**
	Furniture / Electrical installations				
1	Office furniture and Electrification	LS	1	₹ 0.50	₹ 0.50
	sub total				**₹ 0.50**
	Other Assets				
1	preliminary and preoperative	LS		1.38	₹ 1.38
	sub-total Other Assets				**₹ 1.38**
	Total				**₹ 15.68**

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,
BhikhubhaiMukhi Ka KuwaBharwadvash,
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	₹. In Lacs	231.00	269.50	308.00	346.50	385.00
3	Raw Materials & Other direct inputs	₹. In Lacs	120.30	140.35	160.40	180.45	200.50
4	Gross Margin	₹. In Lacs	110.70	129.15	147.60	166.05	184.50
5	Overheads except interest	₹. In Lacs	17.06	18.12	20.25	20.89	21.32
6	Interest @ 10 %	₹. In Lacs	5.36	5.36	3.57	2.68	2.14
7	Depreciation @ 30 %	₹. In Lacs	9.66	6.90	4.83	3.45	3.11
8	**Net Profit before tax**	₹. In Lacs	**78.63**	**98.77**	**118.94**	**139.03**	**157.93**

The basis of profitability calculation:
This unit will have Processing capacity of 60 MT per month and Sales Turnover – 700 MT per annum or Rs 385 Lacs per annum. 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 liter. 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 12.72 % of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
1	Sales at full capacity	₹. In Lacs	385.00
2	Variable costs	₹. In Lacs	200.50
3	Fixed costs incl. interest	₹. In Lacs	23.46
4	BEP = FC/(SR-VC) x 100 =	% of capacity	12.72%

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 Labeling
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 center 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-BaapkiDargah,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,
LoniKalbhor, Pune – 412201
Maharashtra, India

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

Udyamimitraportal (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.