DESICCATED COCONUT POWDER

1. INTRODUCTION:

Coconut powder is the one of the common oldest name which is basically used in making cakes, pastries & chocolates. Coconut powder is usually considered as by product of the coconut oil industry. Coconut powder cannot be stored for long period especially during monsoon months. Coconut powder is manufactured mainly in Ceylon, Philippines & New Guinea. India is famous for their Indian sweets. Coconut powder is also usually in the demand on the other ingredients of sweets. It can be seen here that there is a very good market for coconut powder in India & also abroad. This industry is mainly suitable at the coastal area of West Bengal, Orissa, Andhra Pradesh, Tamil Nadu & Kerala. Kerala is the best place with very simple reason as bulk cultivators of coconut & cheap labour. It is found that there is good demand of desiccated coconut powder. There is good scope for new entrepreneur to venture in to this project.

2. PRODUCT & ITS APPLICATION:

Desiccated coconut is rich in healthy saturated fats with no cholesterol and is also a good source of dietary fiber. Lauric acid, the major fatty acid from the fat of the coconut, has been recognized for its unique properties in food use, which are related to its antiviral, antibacterial, and antiprotozoal functions. Now, capric acid, another of coconut's fatty acids has been added to the list of coconut's antimicrobial components. These fatty acids are found in the largest amounts only in traditional lauric fats, especially from coconut. Also, recently published research has shown that natural coconut fat in the diet leads to a normalization of body lipids, protects against alcohol damage to the liver, and improves the immune system's anti-inflammatory response. Coconut contains dietary fiber which passes through the digestive tract without being broken down or absorbed and is passed out of the body. Instead of contributing to health problems like starch and sugar, fiber

promotes good health. Coconut is a natural low - carb, high - fiber food ideally suited for low carbohydrate diets. Coconut flour has been found in several studies to have a glycemic lowering effect, because coconut meat has a simple carbohydrate content coupled with a high fiber, it yields a flour that is less disruptive to blood sugar levels. It is vegan, low carbohydrate food and gluten free.

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Promoter with high business skill is basic need for this type of project. Successful running this project does not require any specific qualification.

4. INDUSTRY LOOKOUT AND TRENDS

Desiccated coconut, sometimes referred to as Coconut Powder, is a dehydrated form of white coconut meat from freshly selected mature coconut kernels. It is prepared from substantially sound white kernel obtained from the whole nut of coconut *(Cocos nucifera)*. Desiccated coconuts have to be processed in an appropriate manner, undergoing operations such as de-husking (the removal of the husk, leaving the shell intact), hatcheting (the removal of the shell), paring (the removal of the brown skin around the kernel), washing, comminuting, drying (to humidity level below 3%) and sifting. They can be produced without oil extraction or with partial oil extraction by appropriate physical means.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:

Desiccated coconut is used commonly in sweetmeat preparations, as toppings in desserts, ice creams, puddings, etc., as filler in betel leaves and a variety of products. The present production of desiccated coconut is around 5600 tonnes per annum and is concentrated in Karnataka where a number of small units are located. The present production is absorbed by the food processing industries for various end uses. Market surveys have shown that desiccated coconut powder in consumer packs is widely accepted by the middle class

segments in preference to raw nuts. India is the third largest coconut producing country in the world. Copra and coconut oil are the two major products of the coconut processing industry. Nearly 60% of the total production of nuts is utilized for food uses and the rest goes in for oil extraction. In spite of the fact that our country has the necessary raw material to launch new product lines, minimal progress has taken place in the application of modern technology for full utilization of various coconut products such as desiccated coconut, coconut cream powder, partially de-fatted coconut gratings, bottled coconut water, etc., The major market outlets are the " A" and "B" class stores. The product also finds placement in self service counters and departmental stores. Bakeries buy desiccated coconut in bulk quantities for use in different products. Desiccated coconut is a consumer item. It has a longer shelf life and is convenient to use. In addition, it comes with ready to use packs with same freshness of a fresh coconut milk. So, the product has a great market demand in the both domestic and international market. Generally, bakery and confectionery industries are the major consumers of this product.

6. RAW MATERIAL REQUIREMENTS:

The major materials are coconut nuts. Additionally, you have to procure the packaging consumables for your coconut powder manufacturing business. Coconut powder is an essential ingredient for the sweets and confectionery industry. Additionally, it has larger shelf life than raw coconut. The major coconut producing states are Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Orissa, and Maharashtra. So these areas are the ideal location for starting this project. However, you can start the business from any location where you can source the raw coconut easily.

7. MANUFACTURING PROCESS:

First step in the manufacture of desiccated coconut is the selection of coconuts. The quality of desiccated coconut depends upon the quality of coconuts used. Fully matured coconuts of about 12 months are used for the preparation of desiccated coconut. Fully matured nuts are stored with the husk for about one month so that the water inside the

kerortion of nuts called tasta is removed, nels is absorbed. This also facilitates coconut kernels to get separated from shell walls. The coconuts are de husked and their shells are removed. The brown pills by scrapping it off. About 10-15% of the kernel goes as paring by this process. These parings can be pressed out after drying to get oil which can be used for soap making. De shelled coconuts are broken intoen having different sizes (12, 14 and 16 mesh). The segregated material is packed in oil proof, moisture proof polythene lined plywood boxes of 25 kgs. It may also be packed in poly-bags of 250 gms, 500 gms for retail sale. During the process of manufacturing desiccated coconut, a number of by-products such as coconut shell, parings, and pieces, washed properly and disintegrated into powders of various grades. The powder is then dried in a drier by spreading it out uniformly in trays. The temperature in the drying chamber is maintained at about 180 O F and the powder is stirred occasionally during the drying process to ensure uniform drying. Great care should be taken during drying. When powder is dried, it is cooled and passed through a vibratory scre husks are obtained which may be converted into various items of great importance. It has been worked out that 100 kgs of desiccated coconut is obtained from 1000 coconuts ▼ De shelling ▼ Removal of brown testa ▼ Blanching ▼ Disintegration ▼ Drying ▼ Sieving/Grading ▼ Packing

The product should be natural white in colour. It shall have characteristic taste, odour and flavour. It shall be free from cheesy, smoky, musty or any other objectionable odours, fungus and insect infestation. It shall be crisp, free from rancidity and not show fat sweating. DC is categorized into three types based on the particle size and are as follows:
Fine – if size of particle is between 1.40mm and 1.00 mm or if it is retained on 1.00mm IS test sieve.

Medium- If size of particle is between 1070 mm and 1.40 mm or if it is retained on 1.40 mm sieve.

Coarse – If size of particle is more than 1.70 mm or if it passes through 1.70 mm IS test sieve.

Yield of the product is 1 tone from 10,000 coconuts

8. MANPOWER REQUIREMENT:

The enterprise requires 26 employees as detailed below**:**

Sr. No.	Designation of Employees	SALARY PER PERSON	Monthly Salary ₹					
	Working Staff		**PER ANNUM**	**Year-1**	**Year-2**	**Year-3**	**Year-4**	**Year-5**
1	Production Manager	18000	18000	1	1	1	2	2
2	Operators	12000	60000	5	5	5	5	5
3	Helpers	10000	80000	8	8	8	8	8
			158000	14	14	14	15	15
1	**Fixed Staff:**							
2	Admin Manager	15000	30000	2	2	2	2	2
3	Accounts/Stores Assistant	12500	50000	4	4	4	4	4
	Office Boy	9000	80000	3	3	3	3	3
	sub-total		160000	11	11	11	11	11
	Total		318000	25	25	25	26	26

9. IMPLEMENTATION SCHEDULE:

The project can be implemented in 4months' 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)*	4.00

10. COST OF PROJECT:

Sr. No.	Particulars	₹ in Lacs
1	Land	12.00
2	Building	25.00
3	Plant & Machinery	68.00
4	Furniture, other Misc Equipments	5.00
5	Other Assets including Preliminary / Pre-operative expenses	6.80
6	Margin for Working Capital	32.40
	Total	**149.20**

11. MEANS OF FINANCE:

Bank term loans are assumed @ 75 % of fixed assets.

Sr. No.	Particulars	₹ in Lacs
1	Promoter's contribution	37.30
2	Bank Finance	111.90
	Total	**149.20**

12. WORKING CAPITAL CALCULATION:

The project requires working capital of ₹56.00 lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories	16.20	0.25	4.05	12.15
2	Receivables	8.10	0.25	2.03	6.08
3	Overheads	8.10	100%	8.10	0.00
4	Creditors	-		0.00	0.00
	Total	32.40		14.18	18.23

13. LIST OF MACHINERY REQUIRED:

A detail of important machinery is given below:

Sr. No.	Particulars	UOM	Qty	Rate (₹ in Lacs)	Value (₹ in Lacs)
	Plant & Machinery / equipments				
a)	***Main Machinery***				
1	Coconut de shelling machine Whole nut inspection conveyor	Nos	1	18.00	18.00
2	Brown skin removing machine	Nos	1	13.00	13.00
3	Disintegration unit & Washing unit	Nos	1	15.50	15.50
4	Blanching unit Dryer with pre drying circuit and dust collection system	Nos	1	6.00	6.00
5	DC powder cooler Lump breaker	Nos	1	2.00	2.00
6	Vibro seiver Intermediate conveyors	Nos.	1	3.50	3.50
7	Other Machines And Equipments	LS	1	2.60	10.60
	sub-total Plant & Machinery				**₹ 68.00**
	Furniture / Electrical installations				
	Office furniture and Electrification	LS	1	5.00	5.00
1	*sub total*				**₹ 5.00**
	Other Assets				
	preliminary and preoperative	LS			6.80
1	*sub-total Other Assets*				**6.80**
	Total				**79.80**

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:

- 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

- Flour Tech Engineers Private Limited
  Plot No. 182, Sector 24,
  Faridabad - 121005,
  Haryana, India

- P Square Technologies
  3, Swami Mahal,
  Gurunanak Nagar,
  Off. Shankarsheth Road Bhavani Peth,
  Pune - 411002,
  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	97.20	113.40	129.60	145.80	162.00
3	Raw Materials & Other direct inputs	₹. In Lacs	66.16	77.18	88.21	99.23	110.26
4	Gross Margin	₹. In Lacs	31.04	36.22	41.39	46.57	51.74
5	Overheads except interest	₹. In Lacs	18.56	19.72	22.04	22.74	23.20
6	Interest @ 10 %	₹. In Lacs	11.19	11.19	7.46	5.60	4.48
7	Depreciation @ 30 %	₹. In Lacs	47.60	34.00	23.80	17.00	15.30
8	**Net Profit before tax**	₹. In Lacs	**-46.31**	**-28.69**	**-11.91**	**1.23**	**8.76**

The basis of profitability calculation:

This unit will have 1,80,000Kg/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 53.49 % of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
1	Sales at full capacity	₹. In Lacs	162.00
2	Variable costs	₹. In Lacs	110.26
3	Fixed costs incl. interest	₹. In Lacs	27.68
4	BEP = FC/(SR-VC) x 100 =	% of capacity	53.49%

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/ Modernisation 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 specialised 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, 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.