PROJECT REPORT

OF

CHIA SEEDS PROCESSING UNIT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Chia Seeds Processing 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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PROJECT AT GLANCE

1	**Name of Proprietor/Director**	XXXXXXXX	
2	**Firm Name**	XXXXXXXX	
3	**Registered Address**	XXXXXXXX	
4	**Nature of Activity**	XXXXXXXX	
5	**Category of Applicant**	XXXXXXXX	
6	**Location of Unit**	XXXXXXXX	
7	**Cost of Project**	20.19	Rs. In Lakhs
8	**Means of Finance**		
i)	**Own Contribution**	2.02	Rs. In Lakhs
ii)	**Term Loan**	14.18	Rs. In Lakhs
iii)	**Working Capital**	4.00	Rs. In Lakhs
9	**Debt Service Coverage Ratio**	3.13	
10	**Break Even Point**	0.38	
11	**Power Requiremnet**	20	KW
12	**Employment**	7	Persons
13	**Major Raw Materials**	Harvested Chia to producr raw seeds, packing material such as PP Bagsor Gunny bags or Glass jars	

14 Details of Cost of Project & Means of Finance

Cost of Project

Particulars	Amount in Lacs
Land	Owned/Leased
Building & Civil Work	Owned/Leased
Plant & Machinery	14.75
Other Misc Assets	1.00
Working Capital Requirer	4.44
Total	**20.19**

Means of Finance

Particulars	Amount in Lacs
Own Contribution	2.02
Term Loan	14.18
Working capital Loan	4.00
Total	**20.19**

1. INTRODUCTION

Chia seeds come from *Salvia hispanica,* a flowering mint plant native to parts of Mexico and Guatemala. Chia seeds have only become a commercially popular health food in the last decade or so, but they're one of the oldest forms of nutrition and were a staple of Mayan and Aztec diets. Dry chia seeds can also be added whole or ground to smoothies and juices, mixed into yogurt and oatmeal, or sprinkled on top of a salad. Chia seeds can also be used in tonics, jams, crackers, muffins, and grain bowls. Chia seeds are often referred to as a superfood, which simply means they're relatively denser in nutrients compared to other foods. The small seeds hold the holy trinity of nutrition-fiber, protein, and omega-3 fatty acids; which promote slow digestion and a subsequently steady stream of energy. Chia seeds also contain key minerals like calcium and magnesium. They also contain all nine essential amino acids, which are the muscle-building protein-building blocks our bodies need but don't produce naturally—we have to get them through our food. Chia seeds have around 140 calories per serving, which is two tablespoons or 28 grams. Each serving is packed with 4 grams of protein and 11 grams of fiber. Chia seeds don't need to be ground before eating to get the nutritional benefits. Eating them whole will have the same effect, and how you like to eat them is just a matter of personal preference. They're also naturally gluten-free and vegan. Unlike typical grain-source proteins, chia protein contains no gluten. Chia is an ideal food for individuals having gluten sensitivity, carbohydrate intolerance, hypoglycemia, Celiac Disease, Crohn’s Disease, or for anyone wishing to avoid common gluten-containing grains like corn, barley, and wheat. Chia seeds have become

popular in the health foods market recently, even though they are one of the oldest staples of the Aztec and Mayan diets. It is very simple to add chia seeds to smoothies or juices, which is a great option to boost the nutritional value of your drink. A popular way to consume chia seeds is to simply add them to water with a splash of lemon or lime juice.

2. PRODUCT DESCRIPTION

2.1 PRODUCT USES

Chia seeds are becoming increasingly popular as they can be used so diversely in modern cuisine. They can be used as a crispy topping in soups, salads, and desserts, and can add variety to bread and biscuits.

2.2 PRODUCT RAW MATERIAL

- **Raw seeds:** Raw seed is used for seed processing. The vendor can also harvest chia to produce the raw seeds.

- **Packing material:** Paper bags or PP bags, Gunny bags, Glass jars, etc. can be used for packing seeds after processing.

2.3 MANUFACTURING PROCESS

This process can be broken down into the following steps-

- **Raw material procurement**
- **Seed Processing**
- **Testing**

Raw Material Procurement

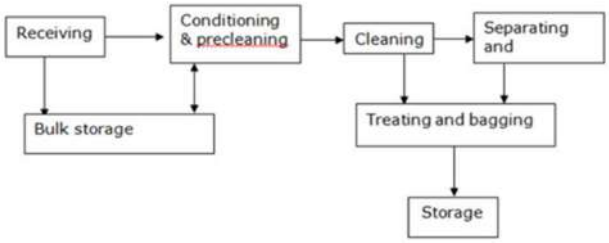
The raw materials are checked strictly as per established quality standards and requirements. Individual supplier assessment and supplier rating are done depending upon the rejection levels at the incoming quality control stage. Preliminary testing of the facility should be carried out by the facility operator to standardize the equipment performance and correct any deficiencies encountered during the testing. The raw material must also be fresh and should be stored in a well-organized area. After treatment and cooling, the chia seed must be placed in new bags. The old bags must be treated or disposed of in a manner that will eliminate pest infestation.

Seed Processing

1) Pre-Cleaning: Removal of external materials like trash, stones, clods which are either in larger size or lighter in weight. No pre-cleaning is required for hand-harvested and

winnowed seeds. In this process enough trash is removed to permit bulk storage and processing, Seed fed more evenly through downstream equipment, High moisture, green material is removed decreasing time and cost of drying, Removal of the bulk of trash permits finer top screens to be used resulting in precise separations. Instead of manual pre-cleaning, automatic cleaning machines are more efficient. This process is most commonly done by a scalper. Here, the raw seed is first fed into a pre-cleaner. At this stage, largely sized impurities are removed. To obtain quality seed, it is necessary to clean the seed obtained from the farm to get rid of inert materials, weed seeds, other crop seeds, other variety seeds, damaged and deteriorated seeds. Different kinds of seeds can be separated when they differ in one or more physical characteristics. Physical characteristics normally used to separate seeds are size, shape, length, weight, color, surface texture, affinity to liquids, electrical conductivity, etc. Before the precleaning drying process can be performed. To avoid any negative effect of high moisture drying will be performed.

2) **Cleaning:** The second stage of cleaning is carried out with air blasts and vibrating screens. It is essentially the same as scalping but more refined. It is performed mostly by one machine known as an air-screen cleaner. Almost all seeds must be cleaned by an air-screen cleaner before specific specifications can be attempted.
3) Sorting and segregating: The partially cleaned seeds are then passed on to a cleaned cum grader; where the undersized materials and the seeds are segregated. The separation is usually done based on the difference in sizes and weights. The cleaned and the seeds of the right size are sent to the indented cylinder where the broken and short seeds are segregated. The graded seeds are then fed into a specific gravity separator. At this stage, light seeds are removed. Sometimes the process moves on to the next stage if adequate impurities are not found. The processes seeds are finally processed.
4) Drying: Before being exported; the seed is treated and sterilized by intense heat to stop germination. Seed polishing can also be done if required.
5) Packing: Now, seeds are sorted packed weighed, and stitched in properly sized packets. The bags of treated seed should be stored in a separate warehouse away from the untreated seed lots to avoid re-infestation or cross-contamination. The treated lots should be properly labeled indicating lot number, size (no of bags/quantity), date of treatment, and signature of the operator.



Pre-cleaning

Cleaning and processing

Packaging

Testing

- Quality Control
- Manual Inspection
- The preliminary testing should include evaluation of temperature probes (sensors) for accuracy of reading and sensitivity; evaluation of temperature chart for accuracy of recording at specified time intervals. The operator should conduct one empty trial run and the other loaded with chia seeds. The data of preliminary testing should be recorded for test treatments to ensure that the facility established will meet the required minimum standards and specifications.

3. PROJECT COMPONENTS

3.1 Land & Building

The land required for this manufacturing unit will be approx. around 3000 square feet. Land Purchase and Building Civil Work Cost have not been considered as part of the cost of project. It is expected that the premises will be on rental and approximate rentals assumed of the same will be Rs.30000 to 40000 per month.

3.2 Plant & Machinery

This is a semi-automatic type of plant and the production capacity is set to be 512 processed seeds per day.

Machines-

- **Seed Cleaner (Pre cleaner)**

This machine is used for the pre-cleaning process of seeds. This machine is used to remove external materials like trash, stones, clods which are either larger or lighter in weight.

- **Air Screen Cleaner**

This machine is used for the separation of undesirable material and seeds from desirable seeds in an air screen machine are done based on differences in seed size and weight. This removes the light seed and trash which was not removed by the upper air and the screens.

- **Gravity Separator**

Gravity Separators use a combination of air, vibration & separation based on density difference. It is used wherever the contamination needs to be separated. Gravity separators are counterbalanced & aerodynamically designed. This method makes use of a combination of weight and surface characteristics of the seed to be separated. The principle of floatation is employed here.

- **Seed dryer**

To remove or reduce moisture content in seed this seed dryer is used. The process of elimination of moisture from the seed is called seed drying. Seed drying should reduce the seed moisture content to safe moisture limits to maintain its viability and vigor during storage, which may otherwise deteriorate quickly owing to mold growth, heating, and enhanced microbial activity.

- **Seed moisture analyzer**

To check moisture content in seed this analyzer can be used. Digital Seed Moisture Meter comes with a hopper, result displaying screen, and feather-touch buttons for control operation. This digital meter is used for testing moisture content in seeds to ensure long shelf life. It is very simple to operate and has high accuracy.

- **Seed Packing Machine**

This machine is used to pack seeds after processing. This machine will also weigh the seeds. Automatic seed filling and lid pressing machines can be used for glass jar packaging.

- **Chia seed processing plant (Optional)**

A fully automatic chia processing plant consists of all seed processing machines such as seed pre-cleaning machines, gravity separating machines, de-stoning, seed polishing, and seed bagging machines. Pre-cleaner used for quickly removing large impurities. Seed Cleaner is used for removing small impurities, large impurity, light impurity, and dust. Destoner is used for removing stones of similar size to your grain or seeds. Gravity separator used for removing bad, broken, and half seeds. Seed polishing machines to make the seed shine led to an increase in the selling price in the market. And automatic bagging system for quantitative packing via Bagging scale system.

4 LICENSE & APPROVALS

Basic registration required in this project:

- MSME Udyam registration
- BIS certification
- ISO certification
- Export License
- Company registration
- GST registration

PROJECTED BALANCE SHEET **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Liabilities					
Capital					
Opening balance		3.42	5.43	8.11	11.50
Add:- Own Capital	2.02				
Add:- Retained Profit	3.65	5.51	8.69	11.89	14.91
Less:- Drawings	2.25	3.50	6.00	8.50	10.50
Closing Balance	**3.42**	**5.43**	**8.11**	**11.50**	**15.91**
Term Loan	12.60	9.45	6.30	3.15	-
Working Capital Limit	4.00	4.00	4.00	4.00	4.00
Sundry Creditors	1.43	1.65	1.90	2.15	2.43
Provisions & Other Liability	0.50	0.60	0.72	0.80	0.96
TOTAL :	**21.94**	**21.13**	**21.03**	**21.61**	**23.31**
Assets					
Fixed Assets (Gross)	15.75	15.75	15.75	15.75	15.75
Gross Dep.	2.36	4.37	6.08	7.53	8.76
Net Fixed Assets	**13.39**	**11.38**	**9.67**	**8.22**	**6.99**
Current Assets					
Sundry Debtors	2.93	3.46	3.97	4.52	5.12
Stock in Hand	3.20	3.69	4.18	4.73	5.31
Cash and Bank	1.22	1.09	1.21	1.64	2.39
Loans & Advances /Other Current Assets	1.20	1.50	2.00	2.50	3.50
TOTAL :	**21.94**	**21.13**	**21.03**	**21.61**	**23.31**

PROJECTED PROFITABILITY STATEMENT **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Capacity Utilisation %	**50%**	**55%**	**60%**	**65%**	**70%**
SALES					
Gross Sale					
CHIA SEEDS PROCESSING UNIT	87.90	103.93	119.00	135.48	153.46
Total	**87.90**	**103.93**	**119.00**	**135.48**	**153.46**
COST OF SALES					
Raw Material Consumed	61.20	70.88	81.22	92.20	104.33
Electricity Expenses	1.92	2.53	2.76	3.00	3.23
Depreciation	2.36	2.01	1.71	1.45	1.23
Wages & labour	5.28	5.81	6.39	7.03	7.73
Repair & maintenance	1.76	2.08	2.38	2.71	3.07
Packaging	3.52	4.16	3.57	4.06	3.84
Cost of Production	76.04	87.47	98.03	110.44	123.42
Add: Opening Stock	-	1.77	2.04	2.29	2.58
Less: Closing Stock	1.77	2.04	2.29	2.58	2.88
Cost of Sales	74.26	87.20	97.78	110.15	123.12
GROSS PROFIT	**13.64**	**16.72**	**21.22**	**25.32**	**30.34**
GROSS PROFIT RATIO	**15.52%**	**16.09%**	**17.83%**	**18.69%**	**19.77%**
Salary to Staff	3.00	3.30	3.63	3.99	4.39
Interest on Term Loan	1.39	1.23	0.88	0.53	0.19
Interest on working Capital	0.44	0.44	0.44	0.44	0.44
Rent	3.84	4.03	4.23	4.45	4.67
Selling & Administrative Exp.	1.32	2.08	2.38	2.71	3.07
TOTAL	**9.99**	**11.08**	**11.56**	**12.12**	**12.76**
NET PROFIT	3.65	5.65	9.66	13.20	17.59
Taxation	-	0.13	0.97	1.31	2.68
PROFIT (After Tax)	**3.65**	**5.51**	**8.69**	**11.89**	**14.91**
NET PROFIT RATIO	**4.15%**	**5.30%**	**7.30%**	**8.78%**	**9.71%**

PROJECTED CASH FLOW STATEMENT

(in Lacs)

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
SOURCES OF FUND					
Own Margin	2.02				
Net Profit	3.65	5.65	9.66	13.20	17.59
Depreciation & Exp. W/off	2.36	2.01	1.71	1.45	1.23
Increase in Cash Credit	4.00	-	-	-	-
Increase In Term Loan	14.18	-	-	-	-
Increase in Creditors	1.43	0.23	0.24	0.26	0.28
Increase in Provisions & Oth labilities	0.50	0.10	0.12	0.08	0.16
	-				
TOTAL :	**28.13**	**7.98**	**11.72**	**14.99**	**19.26**
APPLICATION OF FUND					
Increase in Fixed Assets	15.75				
Increase in Stock	3.20	0.49	0.49	0.55	0.59
Increase in Debtors	2.93	0.53	0.50	0.55	0.60
Repayment of Term Loan	1.58	3.15	3.15	3.15	3.15
Loans & Advances /Other Current Assets	1.20	0.30	0.50	0.50	1.00
Drawings	2.25	3.50	6.00	8.50	10.50
Taxation	-	0.13	0.97	1.31	2.68
TOTAL :	**26.91**	**8.11**	**11.61**	**14.56**	**18.51**
Opening Cash & Bank Balance	-	1.22	1.09	1.21	1.64
Add : Surplus	1.22	-0.13	0.12	0.43	0.75
Closing Cash & Bank Balance	**1.22**	**1.09**	**1.21**	**1.64**	**2.39**

CALCULATION OF D.S.C.R

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
CASH ACCRUALS	6.01	7.52	10.39	13.34	16.14
Interest on Term Loan	1.39	1.23	0.88	0.53	0.19
Total	7.40	8.75	11.27	13.88	16.33
REPAYMENT					
Instalment of Term Loan	1.58	3.15	3.15	3.15	3.15
Interest on Term Loan	1.39	1.23	0.88	0.53	0.19
Total	2.97	4.38	4.03	3.68	3.34
DEBT SERVICE COVERAGE RATIO	**2.49**	**2.00**	**2.80**	**3.77**	**4.89**
AVERAGE D.S.C.R.					**3.13**

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Closing Balance**
1st	Opening Balance						
	1st month	-	14.18	14.18	-	-	14.18
	2nd month	14.18	-	14.18	0.13	-	14.18
	3rd month	14.18	-	14.18	0.13	-	14.18
	4th month	14.18	-	14.18	0.13		14.18
	5th month	14.18	-	14.18	0.13		14.18
	6th month	14.18	-	14.18	0.13		14.18
	7th month	14.18	-	14.18	0.13	0.26	13.91
	8th month	13.91	-	13.91	0.13	0.26	13.65
	9th month	13.65	-	13.65	0.13	0.26	13.39
	10th month	13.39	-	13.39	0.12	0.26	13.13
	11th month	13.13	-	13.13	0.12	0.26	12.86
	12th month	12.86	-	12.86	0.12	0.26	12.60
					1.39	**1.58**	
2nd	Opening Balance						
	1st month	12.60	-	12.60	0.12	0.26	12.34
	2nd month	12.34	-	12.34	0.11	0.26	12.08
	3rd month	12.08	-	12.08	0.11	0.26	11.81
	4th month	11.81	-	11.81	0.11	0.26	11.55
	5th month	11.55	-	11.55	0.11	0.26	11.29
	6th month	11.29	-	11.29	0.10	0.26	11.03
	7th month	11.03	-	11.03	0.10	0.26	10.76
	8th month	10.76	-	10.76	0.10	0.26	10.50
	9th month	10.50	-	10.50	0.10	0.26	10.24
	10th month	10.24	-	10.24	0.09	0.26	9.98
	11th month	9.98	-	9.98	0.09	0.26	9.71
	12th month	9.71	-	9.71	0.09	0.26	9.45
					1.23	**3.15**	
3rd	Opening Balance						
	1st month	9.45	-	9.45	0.09	0.26	9.19
	2nd month	9.19	-	9.19	0.08	0.26	8.93
	3rd month	8.93	-	8.93	0.08	0.26	8.66
	4th month	8.66	-	8.66	0.08	0.26	8.40
	5th month	8.40	-	8.40	0.08	0.26	8.14
	6th month	8.14	-	8.14	0.07	0.26	7.88
	7th month	7.88	-	7.88	0.07	0.26	7.61
	8th month	7.61	-	7.61	0.07	0.26	7.35
	9th month	7.35	-	7.35	0.07	0.26	7.09
	10th month	7.09	-	7.09	0.06	0.26	6.83
	11th month	6.83	-	6.83	0.06	0.26	6.56
	12th month	6.56	-	6.56	0.06	0.26	6.30
					0.88	**3.15**	

4th	Opening Balance						
	1st month	6.30	-	6.30	0.06	0.26	6.04
	2nd month	6.04	-	6.04	0.06	0.26	5.78
	3rd month	5.78	-	5.78	0.05	0.26	5.51
	4th month	5.51	-	5.51	0.05	0.26	5.25
	5th month	5.25	-	5.25	0.05	0.26	4.99
	6th month	4.99	-	4.99	0.05	0.26	4.73
	7th month	4.73	-	4.73	0.04	0.26	4.46
	8th month	4.46	-	4.46	0.04	0.26	4.20
	9th month	4.20	-	4.20	0.04	0.26	3.94
	10th month	3.94	-	3.94	0.04	0.26	3.68
	11th month	3.68	-	3.68	0.03	0.26	3.41
	12th month	3.41	-	3.41	0.03	0.26	3.15
					0.53	**3.15**	
5th	Opening Balance						
	1st month	3.15	-	3.15	0.03	0.26	2.89
	2nd month	2.89	-	2.89	0.03	0.26	2.63
	3rd month	2.63	-	2.63	0.02	0.26	2.36
	4th month	2.36	-	2.36	0.02	0.26	2.10
	5th month	2.10	-	2.10	0.02	0.26	1.84
	6th month	1.84	-	1.84	0.02	0.26	1.58
	7th month	1.58	-	1.58	0.01	0.26	1.31
	8th month	1.31	-	1.31	0.01	0.26	1.05
	9th month	1.05	-	1.05	0.01	0.26	0.79
	10th month	0.79	-	0.79	0.01	0.26	0.53
	11th month	0.53	-	0.53	0.00	0.26	0.26
	12th month	0.26	-	0.26	0.00	0.26	-
					0.19	**3.15**	

DOOR TO DOOR	60	MONTHS
MORATORIUM PERIOD	6	MONTHS
REPAYMENT PERIOD	54	MONTHS

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