

PROJECT PROFILE

ON

SHG - OTHER INDUSTRIES

COIR PITH BLOCKS

Month & Year
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COIR PITH BLOCKS

INTRODUCTION

Coir peat or coir pith is a by product after the extraction of the Coir fibre from the coconut husk. It is a pure natural organic biodegradable matter. It is also an eco-friendly growing medium, ideally used as a soil re-conditioner. Soil structure improves and Soil substrate.

MARKET

Growing awareness abroad, of late, about the coir pith as an excellent alternative for recycling with farming system has pushed up its demand. Incorporating coir pith improves its structure and physical properties of soil.

The advantage of Coir Pith is that it absorbs water in its range of 400-600 per cent of its weight and releases it to soil very slowly.

Besides application of 10 tonnes of Coir Pith per hectare is an effective ameliorative measure against saline and alkaline reactions of soil.

It is abundantly available as it forms 70 % of the weight of the coconut husk.

The increase in the export of this product has proved that the promotional activities of it overseas has yielded positive results.

It is now extensively used in horticultural and for manufacturing manure.

The Netherlands has become major importer of Coir Pith manure. The other main exporters are Australia, UK, US and New Zealand.

The Export of Coir Pith for the past 2 years:

Year	MT	RS In Crores
2003-04	29179	19.76
2004-05	40027	28.34

Coir Dust

Coir dust consist of short fibers (2mm or less) and pith (dust), which are left behind after processing of coconut husk. Coir dust accumulates in large numbers outside the mills, which process the husk for extraction of industrially valuable long fibers. It is estimated that there is accumulation of one million ton of coir pith in the coconut growing states in our country. The high lignin and cellulose content in the pith makes it non-biodegradable. When burnt, it smoulders,

emitting large quantity of smoke for several days causing air pollution. With the help of Bio-Technology Coir dust coir dust could be converted to useful organic manure which has application in agriculture and horticulture industry.

The product obtained after bio-conversion has excellent properties of being used as growing medium especially in soil- less containers for growing high value horticulture crops. Several companies in the Netherlands have in fact been using coconut coir dust in most of their plant production media since 1980s. The coir dust is available in huge quantities in our country which needs to be processed in to a farm suitable for agricultural and horticultural use especially for the floriculture production and landscaping. The coir dust could be an excellent substitute for various peat products since it also has high water holding capacity and ability to last long in the soil. The physical and chemical properties of the coir dust before and after bio-conversion are as follows:

Physical properties

Physical properties	Before Bio-conversion	After Bio-conversion
Total pore space (%)	76.77	19.19
Water holding capacity	684.31	

Chemical properties

Chemical properties	Before Bio-conversion	After Bio-conversion
Moisture (%)	10.15	30-40
PH	5.5-6.1	6.2-6.9
Electrical conductivity(milli mhos / cm	0.3-0.7	0.1-0.25
Organic carbon (%)	29	20.9
Nitrogen (%)	0.28	1.26
Calcium (%)	0.4	0.5
Magnesium (%)	0.36	0.48
C/N Ratio	112:1	24:1
Micro nutrients (PPM)		

Iron	0.07	0.09
Manganese	12.5	25.0
Zinc	7.5	15.8
Copper	3.1	6.2

INSTALLED CAPACITY

The installed capacity of the proposed unit is making coir pith blocks of 5 Kgs each, 60 Blocks per hour. For 8 hours the production the installed capacity will be 2400 kgs. The annual production will be 720MTS for 300 days.

PLANT AND MACHINERY

The following items of plant and machinery are required for the project.

Coir pith Block making machinery-5 kgs blocks 1 Rs.250000
 -60 blocks per hour.

MANUFACTURING PROCESS

The coconut is removed leaving the coconut husk mostly unused.

About 20% of the husk removed is used for coir fiber extraction.

The defibering process separates long fiber (30%) from coir pith (70%).

Fresh coir pith is placed directly into trucks for storage and maturation.

Coir pith is stored in large piles for two to four years. Maturation of coir pith reduces shrinkage, salinity, and phenolic and tannin contents.

The first screening removes long fibers and other husk particles. Drying in concrete yards reduce moisture content to appropriate levels for compressing

The second screening removes fine coir particles.

Dried coir is weighed to make compressed blocks. Coir is compressed into blocks using the hydraulic press. Each lot is tested for salinity, PH, and other parameters. The blocks are then wrapped, labeled and shipped.

RAW MATERIALS

The raw material required for the production at full capacity is given below

For Quantity KGs	720000			
		Qty	Rate	Value
Coir Pith		720000	1.50	1080000
Total				1080000
TOTAL for	720000	Rs. lakhs		10.80
Raw material cost per kg				1.50
Packing charges	720000	0.50		3.60

LOCATION LAND AND BUILDING

The infrastructural facilities required for the project by way of land and building are the following.

Built up area-Sq.ft		600
Rent p.m.-Rs		1200
Advance-10 months.Rs		12000

UTILITIES

The utilities required for the project are the following

Three phase	KW	16.00
Power charges Rs.lakhs p.a		1.82
Power& fuel		1.82
Water-For process-Litres per day		Nil
For human consumption		200

MANPOWER

The manpower requirement for the project is given below

			Monthly	Total
			wages	
Supervisor		1	3000	3000
Skilled		2	2000	4000
Helpers		2	1500	3000
sub total				10000
Add benefits			20%	2000
Total per month				12000
TOTAL PER ANNUM-Rs. lakhs				1.44

COST OF PROJECT AND MEANS OF FINANCE

The cost of project and Means of Finance is estimated as given below

1. COST OF PROJECT			
			[Rs.lakhs]
Land & Building (Advance)			0.12
Plant & Machinery			2.50
Other Misc. assets			0.03
Pre-Operative expenses			0.05
Margin for WC			0.12
			2.82
2. MEANS OF FINANCE			
Capital			0.94
Term Loan			1.88

			2.82
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- The term loan proposed is 75% of the Plant and machinery value.
- The promoters will bring in the required capital contribution to the project.

COST OF PRODUCTION AND PROFITABILITY

A cost and profitability statement projected for the first 5 years of operations is given in Annexure. The profitability is based on the following assumptions.

Assumptions

Installed capacity	720 MTs of Coir Pith blocks per annum
Capacity utilisation	Year-1 -60% Year -2 -70% Year-3 onwards- 80%
Selling price	Rs.4.50 per kg (Rs 4500 per MT)
Raw materials	As per the details given above
Packing materials	As per details given above
Power	Rs.1.82 lakh per annum at 100%
Wages and salaries	Rs. 1.44 lakhs with increase 5% every year.
Repairs and Maintenance	Rs.0.12 lakh per annum
Depreciation	Written down value method -15 % on machinery
Selling general and administrative expenses	Rs.10000 per month
Interest on Term loan	10% per annum
Interest on working capital	10 % per annum
Income tax	33.66 % on profits

ASSESSMENT OF WORKING CAPITAL

The following levels are projected for working capital

	Months	Values	%	Margin	Bank
	Consumptions			Amount	Finance
Raw Materials	0.50	0.27	25%	0.07	0.20
Expenses	1.00	0.05	100%	0.05	0.00
		0.32		0.12	0.20

A bank finance of Rs 0.20 lakh is required by the unit for meeting the working capital

PROFITABILITY RATIOS

The project ensures good profits on investment and sales turnover.

DEBT SERVICE COVERAGE RATIO

The debt service coverage ratio of this concern is very high as the Term loan component is too low and the returns are high in this project.

BREAK EVEN LEVEL

The break even level of the unit is 21% of the installed capacity

LIST OF MACHINERY SUPPLIERS

1. Sukumar Welding Works
Velliangiripudur
Arachalur-638 101
Erode District
2. Sakthi engineering works

9/1 Sakthi Co-op. Industrial Estate
 Udumulpet Road
 Pollachi.

FINANCIAL ASPECTS						
1. COST OF PROJECT						
						[Rs.lakhs]
	Land & Building (Advance)			0.12		
	Plant & Machinery			2.50		
	Other Misc. assets			0.03		
	Pre-Operative expenses			0.05		
	Margin for WC			0.12		
				2.82		
2. MEANS OF FINANCE						
	Capital			0.94		
	Term Loan			1.88		
				2.82		
3. COST OF PRODUCTION & PROFITABILITY STATEMENT						
						[Rs.lakhs]
Years			1	2	3	4
	Installed Capacity Kgs		720000	720000	720000	720000
	Utilisation		60%	70%	80%	80%
	Production/Sales Kgs		432000	504000	576000	576000
	Selling Price		Rs.4.50	per Kg		
	Sales Value (Rs.lakhs)		19.44	22.68	25.92	25.92
	Raw Materials		6.48	7.56	8.64	8.64

Packing Materials		2.16	2.52	2.88	2.88	2.88
Power& fuel		1.09	1.28	1.46	1.46	1.46
Wages & Salaries		1.44	1.47	1.50	1.53	1.56
Repairs & Maintenance		0.12	0.13	0.14	0.15	0.17
Depreciation		0.38	0.32	0.27	0.23	0.20
Cost of Production		11.67	13.27	14.89	14.89	14.90
Selling, Admin, & General exp		1.20	1.26	1.32	1.39	1.46
Interest on Term Loan		0.19	0.16	0.12	0.12	0.12
Interest on Working Capital		0.02	0.02	0.02	0.02	0.02
Total		13.08	14.71	16.35	16.42	16.50
Profit Before Tax		6.36	7.97	9.57	9.50	9.42
Provision for tax		2.14	2.68	3.22	3.20	3.17
Profit After Tax		4.22	5.29	6.35	6.30	6.25
Add: Depreciation		0.38	0.32	0.27	0.23	0.20
Cash Accruals		4.60	5.60	6.62	6.53	6.44
Repayment fo Term loan		0.00	0.47	0.47	0.47	0.47
4. WORKING CAPITAL:						
		Months	Values	%	Margin	Bank
		Consumptions			Amount	Finance
Raw Materials		0.50	0.27	25%	0.07	0.20
Expenses		1.00	0.05	100%	0.05	0.00
			0.32		0.12	0.20
6. PROFITABILITY RATIOS BASED ON 80% UTILISATION						
	<u>Profit after Tax</u>			=	<u>6.35</u>	25%
	Sales				25.92	

	<u>Profit before Interest and Tax</u>		=	<u>9.71</u>	322%		
	Total Investment			3.02			
	<u>Profit after Tax</u>		=	<u>6.35</u>	676%		
	Promoters Capital			0.94			
	7. BREAK EVEN LEVEL						
	Fixed Cost (FC):						
				[Rs.lakhs]			
	Wages & Salaries			1.50			
	Repairs & Maintenance			0.14			
	Depreciation			0.27			
	Admin. & General expenses			1.32			
	Interest on TL			0.12			
				3.35			
	Profit Before Tax (P)			9.57			
	BEL =	$\frac{FC \times 100}{FC + P}$	=	<u>3.35</u>	x	<u>80</u>	x 100
				12.92		100	
				21%	of installed capacity		