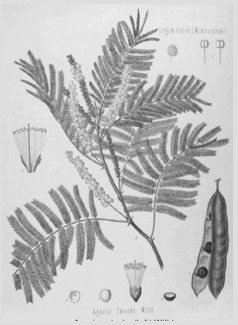
KATTHA & CUTCH



1.0 INTRODUCTION

Kattha & cutch are extracted from wood of Khair tree. Acacia is the botanical name of this tree and it has different varieties like Acacia Sundra, Acacia Catechuoides & Acacia Catechu. These species of tree are mainly concentrated in Uttar Pradesh, Bihar, Rajasthan, Gujarat and Himachal Pradesh. The preferred locations are either UP or Bihar. Manufacture of Kattha is an important forest-based traditional industry in India. The Central Forest Research Institute has developed an improved process to manufacture kattha and cutch. Manufacture of these products is simple and does not require sophisticated technology or equipments. There are many applications of these products.

2.0 PRODUCT

Kattha is bitter, acrid and is used in paan and in medicinal and ayurvedic preparations. Cutch is a by-product of kattha and is used as tanning material, as an additive and preservatives by many industries.

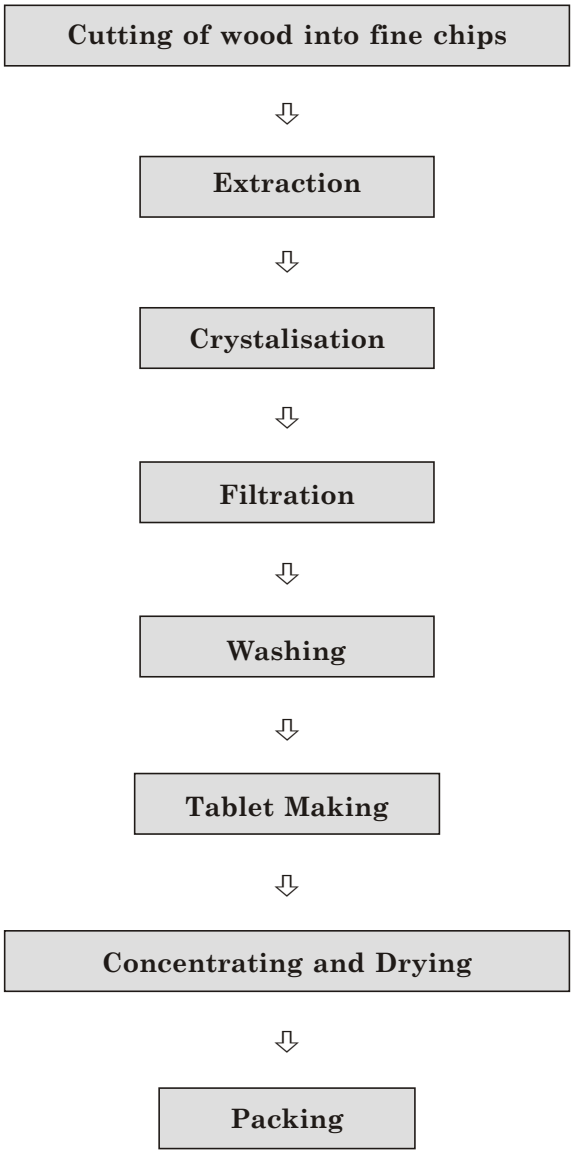
2.1 Compliance under PFA Act is mandatory.

3.0 MARKET POTENTIAL

Kattha is being produced in the country since long and it is a mass consumption item as it is used in preparation of paan all over the country. It has got medicinal values as well and is used in ayurvedic preparations as it cures itching, indigestion and bronchitis and is very effective in leprosy, ulcer, boils, piles, throat diseases etc. On the other hand, cutch has various industrial applications. It is one of the important sources of vegetable tanning materials, used extensively as an additive to the drilling mud used for oil drilling and for preservation of sailing rods, fishing nets, mail bags etc. Thus, both products are versatile with varied application.

4.0 MANUFACTURING PROCESS

Heart wood of khair or acacia is cut into fine chips and around 8-9 kgs. of chips are kept in wire net cage to avoid direct contact with heated surface of extractor. These cages with about 25-27 ltrs. of water (3 times the weight of chips) are placed in extractors. Extraction is done by boiling chips with water for about 3 hours. Extracts from each extractor are mixed after filtering with the help of muslin cloth and concentrated in an open pan on fire and then kept in shade to facilitate crystalisation of Kattha for about 2 days. After complete crystalisation, the curd like mass is passed through frame and plate-type filter press, operated manually and then it is washed with cold water which improves the quality of kattha. It is then placed on wooden frames provided with canvas cloth to separate traces of cutch. Finally, kattha is cut into uniform tablets with the help of wire cutter or knife and dried in sheds. The mother liquor after removal of kattha is further concentrated in an open pan till it becomes viscous and then poured in wooden frames for drying. The dried material is cutch. About 100 kgs of acacia chips give 5 kgs. of kattha and 14 kgs of cutch. Yield largely depends upon the quality of chips. The process flow chart is as under:



5.0 CAPITAL INPUTS

5.1 Land and Building

Bulk of the operations can be carried out in large shed covered with asbestos sheets. Substantial open space shall be required for storage of acacia wood. Hence, a plot of 300 sq.mtrs. with built up area of 150 sq.mtrs. is suggested. Cost of land could be Rs. 0.90 lac whereas the construction cost is assumed to be Rs. 3.00 lacs.

5.2 Machinery

Rated production capacity of 3000 kgs. of kattha per year would yield around 8400 kgs. of cutch as a by-product. This would need the following facilities:

Item	Qty.	Price (Rs.)
50 Kgs. Capacity Aluminium extractors	5	5,000
50 Kgs. Capacity aluminium concentration Pan	15	10,000
Wire-net Cages	20	15,000
Wooden Frames	10	7,000
Frame & Plate-type hand-operated Filter Press	5	75,000
Furnaces (Bhatti)	10	30,000
Misc. tools like rigs, axes, knives, etc.	--	5,000
	Total	**1,47,000**

These machines will be available locally.

5.3 Miscellaneous Assets

Other assets like furniture and fixtures, weighing scales, storage racks etc. would cost Rs. 30,000/-.

5.4 Utilities

Power requirement will be 5 HP whereas water required per day for potable and sanitation and production purposes would be around 1500 ltrs. Wood or coal shall be required for furnaces.

5.5 Raw and Packing Materials

The only raw material would be good quality khair or acacia wood. Uttar Pradesh is one of the leading states of the country in cultivation of these trees. Requirement per month even at 100% utilisation would be 60,000 kgs. and hence prior arrangements are advisable.

6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Workers	2	2,500	5,000
Helpers	4	1,250	5,000
Salesman	2,500	2,500	
		Total	**12,500**

7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	1
Completion of civil work and placement of orders for machinery	4
Erection, installation and trial runs	1

8.0 DETAILS OF THE PROPOSED PROJECT

8.1 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	300	90,000
Building	150	3,00,000
	Total	**3,90,000**

8.2 Machinery

The total cost of machinery is expected to be Rs. 1.47 lacs as explained earlier.

8.3 Miscellaneous Assets

A provision of Rs. 30,000/- would take care of other assets as stated before.

8.4 Preliminary & Pre-operative Expenses

A provision of Rs. 50,000/- is made towards pre-production expenses like registration, establishment and administrative charges, interest during implementation, trial runs and so on.

8.5 Working Capital Requirements

At 60% utilisation in the first year, the working capital needs would be as under:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw Materials	1 Month	30%	0.40	0.28	0.12
Stock of Finished Goods	½ Month	25%	0.32	0.24	0.08
Receivables	½ Month	25%	0.44	0.33	0.11
Other Expenses	1 Month	100%	0.25	--	0.25
		Total	**1.41**	**0.85**	**0.56**

8.6 Cost of the Project & Means of Financing (Rs. in lacs)

Item	Amount
Land and Building	3.90
Machinery	1.47
Miscellaneous Assets	0.30
P&P Expenses	0.50
Contingencies @ 10% on Land and Building & Plant & Machinery	0.53
Working Capital Margin	0.56
Total	**7.26**
Means of Finance	
Promoters' Contribution	2.26
Term Loan from Bank/FI	5.00
Total	**7.26**
Debt Equity Ratio	2.21 : 1
Promoters' Contribution	30%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

9.0 PROFITABILITY CALCULATIONS

9.1 Production Capacity & Build-up

As against the rated capaicty of 3000 kgs. every year, actual utilisation in the first year is assumed to be 60% and second year onwards, it is restricted to 75%.

9.2 Sales Revenue at 100%

Prices of kattha vary from Rs. 225 to Rs. 300 per kg. and at times, they shot-up to even Rs. 350-400. But for the sake of projections, it is taken at Rs. 225/- per kg. Whereas that of cutch, it is assumed to be Rs. 130 per kg. Hence, total income from kattha would be Rs. 6.75 lacs whereas that of cutch it would be Rs. 10.92 lacs.

9.3 Raw and Packing Materials Required at 100%

Khair or acacia would of 60,000 kgs. @ Rs. 17/kg. would cost Rs. 6.60 lacs whereas packing material worth Rs. 40,000/- shall be required.

9.4 Utilities

Annual cost of utilities at 100% utilisation would be Rs. 1.00 lacs.

9.5 Selling Expenses

Market for kattha and cutch is scattered and trade is done through agents or dealers. Hence, a provision of 10% is made every year.

9.6 Interest

Interest on working capital loan from bank is calculated @ 14% per annum whereas on term loan of Rs. 0.00 lacs it is computed @ 12% per annum assuming repayment in 4 years including a moratorium period of 1 year.

9.7 Depreciation

It is computed @ 10% on building and 20% on machinery and miscellaneous assets on WDV basis.

10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
A	**Installed Capacity**	**--- 3000 Tonnes ---**	
	Capacity Utilisation	60%	75%
	Sales Realisation	10.60	13.25
B	**Cost of Production**		
	Raw and Packing Materials	4.20	5.25
	Utilities	0.60	0.75
	Salaries	1.50	1.70
	Stores and Spares	0.06	0.10
	Repairs & Maintenance	0.12	0.20
	Selling Expenses @ 10%	1.05	1.32
	Administrative Expenses	0.36	0.42
	Total	**7.89**	**9.74**
C	**Profit before Interest & Depreciation**	**2.71**	**3.51**
	Interest on Term Loan	0.55	0.42
	Interest on Working Capital	0.12	0.15
	Depreciation	0.65	0.55
	Profit before Tax	1.39	2.39
	Income-tax @ 20%	0.27	0.49
	Profit after Tax	1.12	1.90
	Cash Accruals	1.77	2.45
	Repayment of Term Loan	--	1.50

11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars		Amount
[A]	**Sales**		**10.60**
[B]	**Variable Costs**		
	Raw and Packing Materials	4.20	
	Utilities (70%)	0.42	
	Salaries (70%)	1.05	
	Stores & Spares	0.06	
	Selling Expenses (70%)	0.74	
	Admn Expenses (50%)	0.18	
	Interest on WC	0.12	**6.77**
[C]	**Contribution [A] - [B]**		**3.83**
[D]	**Fixed Cost**		**2.24**
[E]	**Break-Even Point [D] ÷ [C]**		**58%**

12.0 [A] LEVERAGES

Financial Leverage

= EBIT/EBT

= 2.06 ÷ 1.39

= 1.48

Operating Leverage

= Contribution/EBT

= 3.83 ÷ 1.39

= 2.76

Degree of Total Leverage

= FL/OL

= 1.48 ÷ 2.76

= 0.54

[B] Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr
Cash Accruals	1.77	2.45	2.78	3.19
Interest on TL	0.55	0.42	0.24	0.11
Total [A]	**2.32**	**2.87**	**3.02**	**3.30**
Interest on TL	0.55	0.42	0.24	0.11
Repayment of TL	--	1.65	1.65	1.70
Total [B]	**0.55**	**2.07**	**1.89**	**1.81**
DSCR [A] ÷ [B]	**4.22**	**1.39**	**1.58**	**1.82**
Average DSCR	**---------- 2.25 ----------**			

[C] Internal Rate of Return (IRR)

Cost of the project is Rs. 7.26 lacs.

(Rs. in lacs)

Year	Cash Accruals	16%	18%	20%	24%
1	1.77	1.53	1.50	1.47	1.43
2	2.45	1.82	1.76	1.70	1.59
3	2.78	1.78	1.69	1.61	1.46
4	3.19	1.76	1.65	1.54	1.35
5	3.52	1.68	1.54	1.42	1.20
	13.71	**8.57**	**8.14**	**7.74**	**7.03**

The IRR is around 22%.