

1 MAIZE PRODUCTS

1.1 Introduction

Maize is a coarse grain and after initial resistance, it is now being accepted as staple diet and its demand is increasing. Maize soji and flour are now used regularly in many households and eateries. CFTRI has developed a compact mini maize mill which gives very good output and is economical as well.

1.2 Objective

The primary objective of the model report is to facilitate the entrepreneurs in understanding the importance of setting up unit of Milled Maize Product. This model report will serve as guidance to the entrepreneurs on starting up such a new project and basic technical knowledge for setting up such a facility.

1.3 Raw Material Availability

The all-important raw material will be maize. Many states of the country cultivate maize and with proper prior arrangements, availability round the year can be ensured. The total production of Maize in MP in year 2004-05 is 12.52 lakh MT. It stands third in India with the share of 12.39%.

1.4 Market Opportunities

Maize soji and flour are now accepted as staple diet items across the country especially by the rural and semi-urban population. Maize flour is used to make rotis, balis, upma etc. Apart from individual households, dhabas, hostels, restaurants etc. are the bulk consumers.

1.5 Project description

1.5.1 Applications

Maize flour is consumed as main food in the country especially by poor people and is regularly used for making roti. It is also used for making many popular dishes normally made from wheat or rice.

1.5.2 Availability of know how and compliances

CFTRI has developed a mini maize mill. License under the PFA Act is compulsory.

1.5.3 Capacity of the Project

As against the rated capacity of 1200 tonnes per year, actual utilization in the first year is taken as 80%, in second year it is increased to 90% and thereafter increased to 100%.

1.5.4 Manufacturing process

The process is simple and standardised. Pre-cleaned maize is conditioned and then germ and husk fractions are removed mechanically. Maize grits are processed to make different varieties like coarse and fine soji and fine flour. Germ, husk and some high fat grits can be used for food preparations.

1.6 Project component and cost

Major components of the projects and their costs are described in the table hereunder:

PARTICULARS	Unit	Qty	Cost/unit	Total
LAND & BUILDING				13.25
Land	SqM	300	250.00	0.75
Land Development				
Land Area		300	500.00	1.50
Building				
Production Block				
Main Production Area	SqM	100	5,000.00	5.00
Store cum packing room & Sales Counter	SqM	100	5,000.00	5.00
Misc Handling Area	SqM		2,000.00	-
Contingencies		10%		1.00
PLANT & MACHINERY				10.08
Elevators		1	100,000.00	1.00
Aspirators		1	90,000.00	0.90
Destoners		2	50,000.00	1.00
Conditioners		2	75,000.00	1.50
Degermers		2	40,000.00	0.80
Grinders		2	80,000.00	1.60
Sifters		4	40,000.00	1.60
Contingencies		20%		1.68
MISCELLANEOUS FIXED ASSETS				3.00
Misc Assets	LS	1	250,000	2.50
Contingencies		20%		0.50
PRE-OPERATIVE EXPENSES				4.48
Establishment		1	148,000	1.48
Professional Charges		1	100,000	1.00
Security Deposits		1	200,000	2.00
TOTAL				30.81

The cost of the various components will depend on the location of the project. Item wise assumptions are as under:

1.7 Plant and Machinery

Unit will require following machines:

- Elevators
- Aspirators
- Destoners
- Conditioners
- Degermers
- Grinders
- Sifters

The total cost of plant and machinery is Rs. 10.08 lakhs.

1.8 Building

The main production block will cost Rs. 11 lakhs. The entire building will be divided into three zones – main production area, storage cum packing room and sales counter and miscellaneous handling area.

1.9 Miscellaneous Assets

A provision of Rs. 3 lakhs would take care of all the requirements.

1.10 Preliminary & Pre-operative Expenses

A provision of Rs. 4.48 lakhs take care of pre-production expenses like establishment, professional charges, security deposits etc.

1.11 Working Capital Assessment

ITEMS	Year 1	Year 3	Year 5
STOCK OF RAW MATERIAL & PACKING MATERIAL	8.80	11.00	11.00
SUNDRY DEBTORS	17.28	21.60	21.60
TOTAL	26.08	32.60	32.60
MARGIN	6.52	8.15	8.15
MPBF	19.56	24.45	24.45
INTEREST ON WC	2.15	2.69	2.69

1.12 Means of Finance

EQUITY CAPITAL			35.00%	13.07
MOFPI SUBSIDY	25%	50.00	25.00%	9.33
TERM LOAN				
FINANANCIAL INSTITUTIONS		10.00%	40.00%	14.93
<i>-Payable half yearly Installments</i>	10	1.50		
TOTAL			100%	37.33

1.13 Cash flow statement

PARTICULARS	Year 1	Year 3	Year 5	Year 7
SOURCES OF FUNDS				
EQUITY CAPITAL	-	-	-	-
SUBSIDY				
NET PROFIT	3.30	7.36	6.37	5.39
(INTEREST ADDED BACK)				
DEPRECIATION	1.66	1.66	1.66	1.66
PRELIMINARY EXP.W/O	0.64	0.64	0.64	0.64
INCREASE IN TERM LOAN	-	-	-	-
INCREASE IN BANK BORROWINGS-WC	19.56	2.44	-	-
TOTAL	25.16	12.10	8.67	7.69

1.14 Projected balance sheet

PARTICULARS	Year 1	Year 3	Year 5	Year 7
LIABILITIES				
EQUITY CAPITAL	13.07	13.07	13.07	13.07
RESERVES & SURPLUS	8.99	13.96	20.74	26.57
TERM LOAN	13.43	7.43	1.43	-
BANK BORROWINGS-WC	19.56	24.45	24.45	24.45
TOTAL	55.04	58.90	59.68	64.09

1.15 Profitability

Particulars	Year 1	Year 3	Year 5	Year 7
INCOME	115.20	144.00	144.00	144.00
EXPENDITURE	109.60	134.34	135.33	136.31
VARIABLE	97.35	120.02	120.02	120.02
FIXED	12.25	14.32	15.32	16.29
GROSS PROFIT	5.60	9.66	8.67	7.69
PROFIT BEFORE TAX	(0.34)	3.70	3.31	2.70
RETAINED PROFIT	(0.34)	3.70	3.31	2.70

1.16 Key Indicators

NET PRESENT VALUE at current Inflation (Rs in lakhs)	38.65
INTERNAL RATE OF RETURN %	24.40
AVERAGE DSCR	1.48
BREAK EVEN POINT %	88.73
PAY BACK PERIOD (YEARS)	5.93

1.17 Manpower Requirement

PARTICULARS	NO.
SUPERVISORY STAFF	
ACCOUNTANT, MAKTG, ADMN STAFF	2
WORKERS	
PRODUCTION SUPERVISORS	2
SKILLED WORKERS	3
SEMI-SKILLED LABOUR	3

1.18 Assumptions

Project & Financing			
Contingencies on Building			10%
Contingencies on Equipment			20%
Term Loan			40%
Rate of Interest on Term Loan			10%
Subsidy Considered	Subject to ceiling		25%
Expected time of Installation		Months	4
Moratorium		Months	6
CAPACITY			
Rated Capacity Per Annum	90% of Installed capacity	TPA	1200
Number of Operational Days	DAYS		300
Working Hours Per day	Hrs		16
Yield			92%
CAPACITY UTILIZATION			
Year I			80%
Year II			90%
Year III			100%
SALES PRICE			
W S Price			12000
OTHER EXPENSE			
Commission			0.0%
Marketing Expenses			2.5%
POWER			
Connected Load	HP		50
DEPRICIATION AS PER COMPANY'S ACT			
BUILDING			3.34%
PLANT & MACHINERY			10.34%
MISC. FIXED ASSETS			7.07%
LAND & SITE DEVELOPMENT			1.63%
MAINTENANCE			
BUILDING			1.00%
PLANT & MACHINERY			3.00%
MISC. FIXED ASSETS			2.00%
LAND & SITE DEVELOPMENT			0.00%

1.19 Source of machinery

Bridge-Pol Services, Inc Ltd
285 Lincoln St.
Bensenville, IL 60106

The actual cost of projects may deviate on change of any of the assumptions.