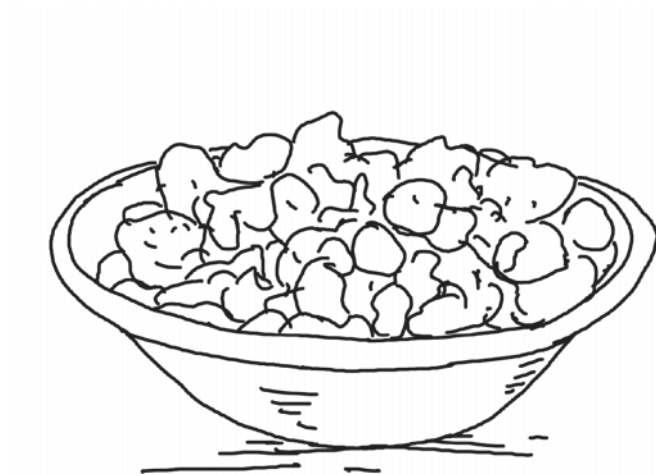


CORN/MAIZE FLAKES



1.0 INTRODUCTION

Health awareness is increasing day-by-day and people are more conscious about their health. Maize has got many nutritional values. Maize flakes are a product which is being accepted by many as health food. Flakes can be deep fried and are used extensively while making "chevada" - a popular snack item in Maharashtra. Dry roasted maize flakes along with a small quantity of sugar are mixed in milk and it becomes a health food especially for growing children.

This project profile is for setting up of a Maize processing unit for production of flakes with installed processing capacity of 100 MT of maize nuts per annum.

2.0 MARKET POTENTIAL

With increasing health awareness, people are choosy about their eating habits and many health foods are becoming popular. Maize is considered to be good for

health. Maize flour is very popular in many regions and maize flakes are being accepted as health food. But people at large are still not familiar with maize flakes and therefore with proper publicity, there is scope for taking up maize flake making unit as successful business venture.

3.0 PROCESS DETAILS

Maize nuts are cleaned and graded to remove mud, stones etc and then soaked in hot water. After drying, they are roasted and then taken to flaker polisher wherein flakes are formed. Flakes are then passed through sieves to remove bran and broken maize and are then suitably packed in polythene bags. During this process, the net recovery of flakes is 80%. Of the balance 20%, process loss is 5% and remaining 15% is bran and broken flakes or maize which is sold to cattle-feed manufacturers.

4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land and Site Development	-
Building & Civil Works	3.96
Machinery & Equipment	2.44
Misc. Fixed Assets	2.00
Preliminary & Pre-operative Expenses	0.86
Contingencies & Escalation @ 3%	0.25
Working Capital	2.36
TOTAL	11.87

4.1 Land & Site Development: No cost has been considered for land & site development. It is assumed that the unit will be set up in own land.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Work Shed (Half Brick wall, CGI sheet roof, Concrete Floor)	45	4000	180000
Office & Store (Brick wall, CGI sheet roof, Concrete Floor)	40	4500	180000
Sub total			360000
Add: Electrification, Water Supply, etc @ 10%			36000
TOTAL			396000
Say (Rs. in lacs)			3.96

4.3 Machinery & Equipment: Details of machinery & equipment are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Electrically-operated Roaster	1	90000	90000
Flaker Polisher	1	60000	60000
Coal-fired Furnace	1	15000	15000
Sieves	2	5000	10000
Miscellaneous items	LS	LS	20000
Sub total			195000
Add: Transportation, installation, etc @ 15%			29250
TOTAL			244250
Say (Rs. in lacs)			2.44

4.4 Misc. Fixed Assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Power connection (25 HP)	1	100000	100000
Water supply system (STW boring, 3 HP pump set, storage, pipes & fittings)	1	80000	80000
Furniture & Fixtures	LS	LS	10000
Miscellaneous items	LS	LS	10000
TOTAL			200000
Say (Rs. in lacs)			2.00

4.5 Preliminary & Pre-operative Expenses: Details of preliminary & pre-operative expenses are given below.

Particulars	Amount (Rs lacs)
Travelling expenses	0.40
Professional & other fees	0.20
Interest during implementation	0.16
Miscellaneous expenses	0.10
TOTAL	0.86

4.7 Contingencies & Escalation: Contingencies & escalation has been assumed at 3% of the cost of building & civil works, machinery & equipments and miscellaneous fixed assets.

4.8 Working Capital: Details of working capital are given below.

	Period (days)	Amount (Rs lacs)		
		Yr 1	Yr 2	Yr 3
Raw Materials & Consumables	30	1.13	1.36	1.58
Utilities	30	0.10	0.12	0.15
Salary	30	0.34	0.34	0.34
Finished Goods	15	0.79	0.91	1.04
Receivables	15	0.00	0.00	0.00
TOTAL		2.36	2.73	3.11
Working Capital Margin in Yr 1 (100%)	2.36			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

Particulars	Percent	Amount (Rs lacs)
EQUITY		
A. Equity from Promoters	40%	4.75
B. Subsidy from Central/State Govt.	-	
DEBT		
Term Loan from Banks/FIs	60%	7.12
TOTAL	100%	11.87

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
A. INCOME					
Production capacity (MT)					
(a) Maize Flakes	80	80	80	80	80
(b) Bran & broken flakes	15	15	15	15	15
Capacity utilisation	50%	60%	70%	70%	70%
Production/annum at capacity utilisation (MT)					
(a) Maize Flakes	40	48	56	56	56
(b) Bran & broken flakes	8	9	11	11	11
Price (Rs/tonne)					
(a) Maize Flakes	50000	50000	50000	50000	50000
(b) Bran & broken flakes	6000	6000	6000	6000	6000
Income from sales/annum					
(a) Maize Flakes	20.00	24.00	28.00	28.00	28.00
(b) Bran & broken flakes	0.45	0.54	0.63	0.63	0.63
Total income	20.45	24.54	28.63	28.63	28.63
B. OPERATING EXPENSES					
Raw Materials & Consumables	13.75	16.50	19.25	19.25	19.25
Utilities	1.26	1.52	1.77	1.77	1.77
Salary	4.08	4.12	4.16	4.20	4.25
Repair & Maintenance	0.08	0.10	0.12	0.15	0.17
Selling Expenses	0.00	0.00	0.00	0.00	0.00
Miscellaneous Expenses	0.00	0.00	0.00	0.00	0.00
Total Operating Expenses	19.18	22.24	25.30	25.37	25.44
Less: Working expenses capitalised	2.36	0.00	0.00	0.00	0.00
Operating profit	3.63	2.30	3.33	3.26	3.19

C. FINANCIAL EXPENSES					
Depreciation	0.43	0.43	0.43	0.43	0.43
Interest on Term Loan	0.57	0.47	0.34	0.21	0.07
Net Profit	2.63	1.40	2.56	2.63	2.69
Net cash accruals	3.06	1.83	2.99	3.06	3.12
Principal Repayment	0.42	1.68	1.68	1.68	1.68

6.1 Estimation of Production Capacity: Production of Corn/maize flakes at installed capacity is estimated as below.

Rated processing capacity (tonnes/annum of maize nuts)	100
Yield of maize flakes from nuts (%)	80%
Yield of bran and broken flakes (%)	15%
Production/ annum of maize flakes at installed capacity (MT)	80
Production/ annum of bran & broken flakes at installed capacity (MT)	15

6.2 Raw Materials & Consumables: Expenses on raw materials & consumables at installed capacity is estimated as below.

Particulars	Qty (MT)	Rate (Rs)	Amount (Rs)
Maize nuts	100	25000	2500000
Add: Expenses on packing material @ 10%			250000
Expenses on raw materials & consumables at installed capacity (Rs)			2750000

6.3 Utilities: Expenses on utilities at installed capacity is estimated as below.

Expenses on power

Connected Load (kw)	19
Avg. load factor	70%
Hrs/day	8
Days/annum	300
Annual power consumption (kwh)	31332
Rate per unit (Rs)	5
Expenses on power per annum at installed capacity (Rs)	156660
Add: Expenses on hard coke @ Rs 8,000/ month	96000
Expenses on utilities per annum at installed capacity (Rs)	252660

6.4 Salary: Expenses on salary in the 1st year is estimated as given below. It is assumed that salary expenses will increase @ 1% every subsequent year.

Particulars of Employees	Numbers	Salary/Month (Rs)	Cost/annum (Rs)
Manager (Self)	0	0	0
Skilled Workers/Machine Operators	3	6000	216000
Sales Staff	1	4000	48000
Helpers	4	3000	144000
Expenses on salary in the 1 st year (Rs)			408000

6.5 Repair & Maintenance: Expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 20% every subsequent year.

Particulars	Cost (Rs)	Rate	Amount (Rs lacs)
Building & Civil Works	3.96	1%	0.04
Machinery & Equipment	2.44	1%	0.02
Misc. Fixed Assets	2.00	1%	0.02
Expenses on repair & maintenance in the 1 st year (Rs)			0.08

6.6 Selling Expenses: Selling expenses have been assumed at 1% of sales.

6.7 Miscellaneous Expenses: Miscellaneous expenses have been assumed at 0.5% of sales.

6.8 Depreciation: Depreciation has been calculated by straight line method. The details of calculation are given below.

Description	Cost (Rs)	Rate	Amount/annum (Rs lacs)
Building & Civil Works	3.96	3.34%	0.13
Machinery & Equipment	2.44	7.07%	0.17
Misc. Fixed Assets	2.00	6.23%	0.12
TOTAL			0.43

6.9 Interest on Term Loan & Principal Repayment: Interest rate has been assumed at 8% per annum. Duration of Loan repayment has been considered for a period of 5 years including moratorium period of 9 months with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5
Month 1	Opening balance	7.12	6.71	5.03	3.35	1.68
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest (8%)	0.05	0.04	0.03	0.02	0.01
	Closing balance	7.12	6.57	4.89	3.21	1.54
Month 2	Opening balance	7.12	6.57	4.89	3.21	1.54
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.02	0.01
	Closing balance	7.12	6.43	4.75	3.07	1.40
Month 3	Opening balance	7.12	6.43	4.75	3.07	1.40
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.02	0.01
	Closing balance	7.12	6.29	4.61	2.93	1.26
Month 4	Opening balance	7.12	6.29	4.61	2.93	1.26
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.02	0.01
	Closing balance	7.12	6.15	4.47	2.79	1.12
Month 5	Opening balance	7.12	6.15	4.47	2.79	1.12
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.02	0.01
	Closing balance	7.12	6.01	4.33	2.65	0.98
Month 6	Opening balance	7.12	6.01	4.33	2.65	0.98
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.02	0.01
	Closing balance	7.12	5.87	4.19	2.51	0.84
Month 7	Opening balance	7.12	5.87	4.19	2.51	0.84
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.02	0.01
	Closing balance	7.12	5.73	4.05	2.37	0.70
Month 8	Opening balance	7.12	5.73	4.05	2.37	0.70
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.02	0.00
	Closing balance	7.12	5.59	3.91	2.24	0.56
Month 9	Opening balance	7.12	5.59	3.91	2.24	0.56
	Repayment	0.00	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.01	0.00
	Closing balance	7.12	5.45	3.77	2.10	0.42
Month 10	Opening balance	7.12	5.45	3.77	2.10	0.42
	Repayment	0.14	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.03	0.01	0.00
	Closing balance	6.98	5.31	3.63	1.96	0.28
Month 11	Opening balance	6.98	5.31	3.63	1.96	0.28
	Repayment	0.14	0.14	0.14	0.14	0.14
	Interest	0.05	0.04	0.02	0.01	0.00
	Closing balance	6.85	5.17	3.49	1.82	0.14
Month 12	Opening balance	6.85	5.17	3.49	1.82	0.14
	Repayment	0.14	0.14	0.14	0.14	0.14

	Interest	0.05	0.03	0.02	0.01	0.00
	Closing balance	6.71	5.03	3.35	1.68	0.00
Principal Repayment		0.42	1.68	1.68	1.68	1.68
Interest		0.57	0.47	0.34	0.21	0.07

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	Total
Profit After Tax (Net Profit)	2.63	1.40	2.56	2.63	2.69	
Depreciation	0.43	0.43	0.43	0.43	0.43	
Interest	0.57	0.47	0.34	0.21	0.07	
Total	3.63	2.30	3.33	3.26	3.19	15.72
Interest	0.57	0.47	0.34	0.21	0.07	
Loan repayment	0.42	1.68	1.68	1.68	1.68	
Total	0.99	2.15	2.02	1.88	1.75	8.79
DSCR	3.68	1.07	1.65	1.73	1.82	

Average DSCR = 1.79

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	20.45	24.54	28.63
B. Variable cost			
Raw Materials & Consumables	13.75	16.50	19.25
Utilities	1.26	1.52	1.77
Selling Expenses	0.00	0.00	0.00
Miscellaneous Expenses	0.00	0.00	0.00
Total variable cost	15.01	18.02	21.02
C. Contribution (A-B)	5.44	6.52	7.61
D. Fixed & Semi-fixed Costs			
Salary	4.08	4.12	4.16
Repair & Maintenance	0.08	0.10	0.12
Interest on Term Loan	0.57	0.47	0.34
Depreciation	0.43	0.43	0.43
Total fixed cost	5.16	5.13	5.05
E. BREAK EVEN POINT	94.92%	78.57%	66.39%
F. BEP at operating capacity	47.46%	47.14%	46.47%
G. Cash BEP	43.51%	43.19%	42.52%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5
CASH OUTFLOW						
Capital Expenditure	8.65	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	2.36	0.38	0.38	0.00	0.00
Total (A)	8.65	2.36	0.38	0.38	0.00	0.00
CASH INFLOW						
Profit After Tax		2.63	1.40	2.56	2.63	2.69
Add: Depreciation		0.43	0.43	0.43	0.43	0.43
Add: Interest		0.57	0.47	0.34	0.21	0.07
Add: Salvage Value						1.30
Total (B)	0.00	3.63	2.30	3.33	3.26	4.49
NET FLOW (B-A)	-8.65	1.27	1.93	2.95	3.26	4.49

IRR = 15%

MACHINERY SUPPLIERS

- (a) M. R. Engineering Works
C - No. 23, Sector No. 10, Noida - 201301, Uttar Pradesh, India
- (b) G. L. Extrusion System Private Limited
RZ-172/12, Street No. 4, Durga Park, Nasirpur, Dabri Road, New Delhi - 110 045, Delhi, India
- (c) Grain Tech International
100 - Feet Road, Jeewan Nagar, Opposite Sector - 55, Near Sardar Patel International School, Faridabad - 121 004, Haryana, India