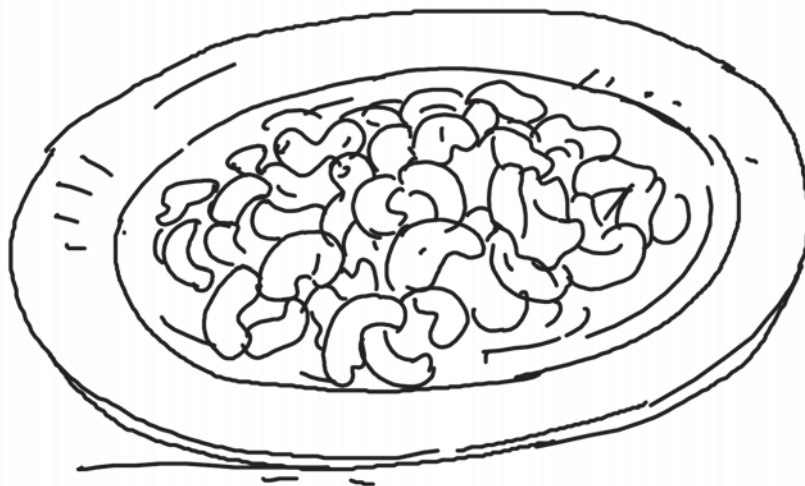


MACARONI



1.0 INTRODUCTION

Macaroni or gold finger is a simple product made from maida and tapioca flour with shape like a hollow tube or pipe in different sizes ranging from 1" to 4" long. It is a mass consumption item especially amongst children and youngsters. The product comes under "Ready-to-Eat" category and has become very popular throughout the country. Macaroni means a product made from a blend of flours and is made for different cooking methods. Some are made for cooking whereas others for frying.

This project profile is for setting up of a Macaroni production unit of frying type with installed processing capacity of 100 MT of raw materials (Maida and Tapioca Flour) per annum.

2.0 MARKET POTENTIAL

Gold fingers are very popular throughout the country especially amongst children and youngsters. It is one of the cheapest eatables available in the market as compared to potato wafers, cheese balls or other such items in the same category. Its popularity in urban markets is limited but semi-urban and rural markets have witnessed substantial increase in demand. Since they enjoy considerable shelf-life, they are stored in

households in large quantities. It has become a very popular snack food or lunch-box item. Since it is not a very costly item, people from all walks of life can afford it.

3.0 PROCESS DETAILS

The process starts with dry mixing of maida, tapioca starch and soda bicarbonate in the vertical mixer. Then boiled water is added to this mix to prepare dough in the dough mixer. The time required is about 15 minutes. Kneaded dough is then taken to macaroni-making machine where extruded material of desired shape and length is obtained by using an appropriate die. At this stage, the moisture content is around 30%. The product is collected in wooden trays where surface drying takes place and it becomes hard enough to be handled without sticking or being crushed. Then the product is semi-dried by exposing to indirect sunrays or keeping in shade. This quality of macaroni does not have satisfactory cooking quality as there is heavy loss on cooking. Heat treatment can improve the quality but this imparts brown colour which may not be liked by the consumers. The product can be exposed to steam for about 15 minutes and then dried. This process increases the shelf life as the moisture content comes down to around 10%. Process loss is 8 to 10%.

4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land & Site Development	-
Building & Civil Works	4.62
Machinery & Equipment	7.72
Misc. Fixed Assets	2.00
Preliminary & Pre-operative Expenses	0.95
Contingencies & Escalation @ 3%	0.43
Working Capital	1.34
TOTAL	17.06

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)	60	4000	240000
Office & Store (Brick wall, CGI sheet roof, Concrete Floor)	40	4500	180000
Sub total			420000
Add: Electrification, Water Supply, etc @ 10%			42000
TOTAL			462000
Say (Rs. in lacs)			4.62

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Vertical type powder mixer with accessories	6	20000	120000
Blade type dough mixer	25	500	12500
Macaroni making machine with die-head	1	25000	25000
Boiler of 30 ltrs. capacity	1	35000	35000
Galvanised water storage tanks	2	220000	440000
Wooden Trays	100	200	20000
Extra die-heads, cutters etc	LS	LS	10000
Sub total			662500
Add: Transportation, installation, etc @ 15%			99375
TOTAL			771875
Say (Rs. in lacs)			7.72

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	0.25
Miscellaneous expenses	0.10
TOTAL	0.95

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

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

Particulars	Period (days)	Amount (Rs lacs)		
		Yr 1	Yr 2	Yr 3
Raw Materials & Consumables	30	1.13	1.36	1.59
Utilities	30	0.06	0.08	0.09
Salary	30	0.40	0.41	0.41
Finished Goods	15	0.82	0.95	1.07
Receivables	15	0.92	1.11	1.29
TOTAL		3.35	3.90	4.46
Working Capital Margin in Yr 1 (40%)	1.34			

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%	6.83
B. Subsidy from Central/State Govt.	-	
DEBT		
Term Loan from Banks/FIs	60%	10.24
TOTAL	100%	17.06

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
A. INCOME							
Production capacity (MT)	90	90	90	90	90	90	90
Capacity utilisation	50%	60%	70%	70%	70%	70%	70%
Production at CU (MT)	45	54	63	63	63	63	63
Price (Rs/tonne)	50000	50000	50000	50000	50000	50000	50000
Income from sale	22.50	27.00	31.50	31.50	31.50	31.50	31.50
B. OPERATING EXPENSES							
Raw Materials & Consumables	13.80	16.56	19.32	19.32	19.32	19.32	19.32
Utilities	0.78	0.94	1.10	1.10	1.10	1.10	1.10
Salary	4.92	4.97	5.02	5.07	5.12	5.17	5.22
Repair & Maintenance	0.14	0.17	0.21	0.25	0.30	0.36	0.43
Selling Expenses	0.23	0.27	0.32	0.32	0.32	0.32	0.32
Miscellaneous Expenses	0.11	0.14	0.16	0.16	0.16	0.16	0.16
Total Operating Expenses	19.98	23.05	26.11	26.21	26.31	26.42	26.54
Less: Working expenses capitalised	1.34	0.00	0.00	0.00	0.00	0.00	0.00
Operating profit	3.86	3.95	5.39	5.29	5.19	5.08	4.96
C. FINANCIAL EXPENSES							
Depreciation	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Interest on Term Loan	0.82	0.73	0.60	0.46	0.33	0.20	0.07
Interest on Working Capital Loan	0.32	0.37	0.43	0.43	0.43	0.43	0.43
Net Profit	1.89	2.03	3.54	3.58	3.61	3.63	3.64
Net cash accruals	2.72	2.85	4.36	4.40	4.43	4.45	4.46
Principal Repayment	0.41	1.64	1.64	1.64	1.64	1.64	1.64

6.1 Estimation of Production Capacity: Production of macaroni at installed capacity is estimated as below.

Rated processing capacity (tonnes/annum of maida & tapioca flour)	100
Process loss (%)	10%
Production/annum of macaroni at installed capacity (MT)	90

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

Particulars	Qty (MT)	Rate (Rs)	Amount (Rs)
Maida	50	21000	1050000
Tapioca Flour	50	25000	1250000
Sub total			2300000
Add: Additives, packing material, etc @ 20%			460000
Expenses on raw materials & consumables at installed capacity (Rs)			2760000

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

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 Employee	Numbers	Salary/Month (Rs)	Cost/annum (Rs)
Manager (Self)	-	-	-
Skilled Workers/Machine Operators	3	7000	252000
Sales Staff	1	5000	60000
Helpers	5	3000	180000
Expenses on salary in the 1st year (Rs)			492000

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	4.62	1%	0.05
Machinery & Equipment	7.72	1%	0.08
Misc. Fixed Assets	2.00	1%	0.02
Expenses on repair & maintenance in the 1st year (Rs)			0.14

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	4.62	3.34%	0.15
Machinery & Equipment	7.72	7.07%	0.55
Misc. Fixed Assets	2.00	6.23%	0.12
TOTAL			0.82

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 7 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	6	7
Month 1	Opening balance	10.24	9.83	8.19	6.55	4.91	3.28	1.64
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest (8%)	0.07	0.07	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.24	9.69	8.05	6.42	4.78	3.14	1.50
Month 2	Opening balance	10.24	9.69	8.05	6.42	4.78	3.14	1.50
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.24	9.56	7.92	6.28	4.64	3.00	1.37
Month 3	Opening balance	10.24	9.56	7.92	6.28	4.64	3.00	1.37
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.24	9.42	7.78	6.14	4.50	2.87	1.23
Month 4	Opening balance	10.24	9.42	7.78	6.14	4.50	2.87	1.23
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.24	9.28	7.64	6.01	4.37	2.73	1.09
Month 5	Opening balance	10.24	9.28	7.64	6.01	4.37	2.73	1.09
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.24	9.15	7.51	5.87	4.23	2.59	0.96
Month 6	Opening balance	10.24	9.15	7.51	5.87	4.23	2.59	0.96
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.24	9.01	7.37	5.73	4.10	2.46	0.82
Month 7	Opening balance	10.24	9.01	7.37	5.73	4.10	2.46	0.82
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.24	8.87	7.23	5.60	3.96	2.32	0.68
Month 8	Opening balance	10.24	8.87	7.23	5.60	3.96	2.32	0.68
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.00
	Closing balance	10.24	8.74	7.10	5.46	3.82	2.18	0.55
Month 9	Opening balance	10.24	8.74	7.10	5.46	3.82	2.18	0.55
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.03	0.01	0.00
	Closing balance	10.24	8.60	6.96	5.32	3.69	2.05	0.41
Month 10	Opening balance	10.24	8.60	6.96	5.32	3.69	2.05	0.41
	Repayment	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.04	0.02	0.01	0.00
	Closing balance	10.10	8.46	6.83	5.19	3.55	1.91	0.27
Month 11	Opening balance	10.10	8.46	6.83	5.19	3.55	1.91	0.27
	Repayment	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.05	0.03	0.02	0.01	0.00
	Closing balance	9.96	8.33	6.69	5.05	3.41	1.77	0.14
Month 12	Opening balance	9.96	8.33	6.69	5.05	3.41	1.77	0.14
	Repayment	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Interest	0.07	0.06	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.83	8.19	6.55	4.91	3.28	1.64	0.00
Principal Repayment		0.41	1.64	1.64	1.64	1.64	1.64	1.64
Interest		0.82	0.73	0.60	0.46	0.33	0.20	0.07

6.10 Interest on Working Capital: Interest rate on working capital loan has been assumed at 16%. The details of calculation are given below.

(Rs. in lacs)

Particulars	Year 1	Year 2	Year 3
Total current assets	3.35	3.90	4.46
Bank Loan (60%)	2.01	2.34	2.67
Interest @ 16%	0.32	0.37	0.43

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	6	7	Total
Profit After Tax (Net Profit)	1.89	2.03	3.54	3.58	3.61	3.63	3.64	
Depreciation	0.82	0.82	0.82	0.82	0.82	0.82	0.82	
Interest	0.82	0.73	0.60	0.46	0.33	0.20	0.07	
Total	3.53	3.58	4.96	4.87	4.77	4.66	4.53	30.89
Interest	0.82	0.73	0.60	0.46	0.33	0.20	0.07	
Loan repayment	0.41	1.64	1.64	1.64	1.64	1.64	1.64	
Total	1.23	2.36	2.23	2.10	1.97	1.84	1.71	13.45
DSCR	2.88	1.51	2.22	2.31	2.42	2.53	2.65	

Average DSCR = 2.30

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales (Rs. lakh)	22.50	27.00	31.50
B. Variable cost			
Raw Materials & Consumables	13.80	16.56	19.32
Utilities	0.78	0.94	1.10
Selling Expenses	0.23	0.27	0.32
Miscellaneous Expenses	0.11	0.14	0.16
Interest on Working Capital Loan	0.32	0.37	0.43
Total variable cost	15.24	18.28	21.32
C. Contribution (A-B)	7.26	8.72	10.18
D. Fixed & Semi-fixed Costs			
Salary	4.92	4.97	5.02
Repair & Maintenance	0.14	0.17	0.21
Interest on Term Loan	0.82	0.73	0.60
Depreciation	0.82	0.82	0.82
Total fixed cost	6.70	6.69	6.65
E. BREAKEVEN POINT	92.38%	76.74%	65.26%
F. BEP at operating capacity	46.19%	46.05%	45.68%
G. Cash BEP	40.51%	40.37%	40.01%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6	7
CASH OUTFLOW								
Capital Expenditure	14.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	3.35	0.55	0.55	0.00	0.00	0.00	0.00
Total (A)	14.77	3.35	0.55	0.55	0.00	0.00	0.00	0.00
CASH INFLOW								
Profit After Tax		1.89	2.03	3.54	3.58	3.61	3.63	3.64
Add: Depreciation		0.82	0.82	0.82	0.82	0.82	0.82	0.82
Add: Interest		0.82	0.73	0.60	0.46	0.33	0.20	0.07
Add: Salvage Value (15%)								2.22
Total (B)	0.00	3.53	3.58	4.96	4.87	4.77	4.66	6.75
NET FLOW (B-A)	-14.77	0.18	3.02	4.40	4.87	4.77	4.66	6.75

IRR = 15%

MACHINERY SUPPLIERS

- (a) AKG Exim Private Limited
411, Pearls Corporate, Near Deepali chowk, Manglam Place, Sector-3, Rohini, Delhi-110085 (India)
- (b) Chirag Electronics
144, Type-A, sec-59, HSIDC, Industrial Area estate, Ballabgarh, Faridabad, Haryana, India
- (c) Khushi Engineering Works
C-70, Sector-8, Noida, Uttar Pradesh, India