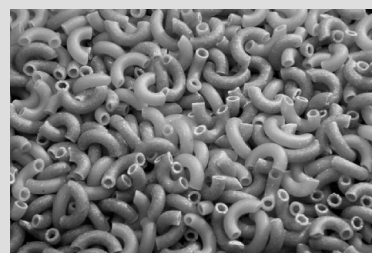


# MACARONI (GOLD FINGER)



## 1.0 INTRODUCTION

Macaroni or gold finger is a simple product made from maida and tapioca flour. This 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. It is manufactured in different sizes, hollow or solid and for different cooking methods. Some are made for cooking whereas others for frying. This note is for macaroni or gold finger meant for frying.

## 2.0 PRODUCT

Macaroni 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. Its shelf life is more than a month under normal conditions. It is available in different colours. This product is very popular across the country and can be made at a location which is closer to the market.

**2.1 Compliance with PFA Act is compulsory.**

## 3.0 MARKET POTENTIAL

### 3.1 Demand and Supply

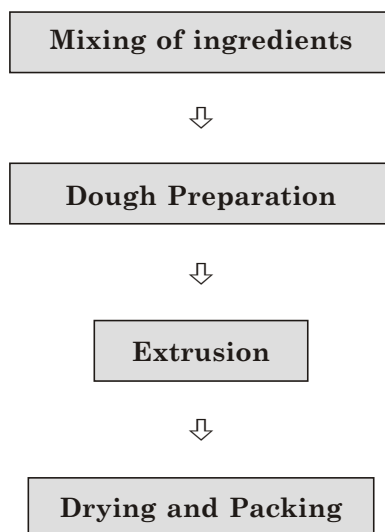
Gold fingers are very popular throughout the country especially amongst children and youngsters. It is one of the cheap eatables available in the market as compared to potato wafers, cheese balls or other such items in the same category. Its popularity in urban markets is limited but semi-urban and rural 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.

### 3.2 Marketing Strategy

Market for gold fingers is scattered and they can be sold at many places. Hence, proper distribution arrangements must be made. They are generally salty but depending upon local tastes and liking some other suitable flavours can be made.

## 4.0 MANUFACTURING PROCESS

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 sun-rays or keeping in shade. This quality of macaroni does not have satisfactory cooking quality as it gives heavy loss on cooking. Heat treatment can improve this quality but then it 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. It increases the shelf life as the moisture content comes down to around 10%. Process loss is 8 to 10%. The process flow chart is as follows:



## 5.0 CAPITAL INPUTS

### 5.1 Land and Building

Land measuring around 250 sq.mtrs. with built-up area of 125 sq.mtrs. shall be required. Land may cost Rs.75,000/- whereas construction cost would be Rs.3.25 lacs.

## 5.2 Machinery

Monthly manufacturing capacity of 10 tonnes or 120 tonnes annually with 2 shift working and 300 working days would require following machines:

Item	Qty.	Price (Rs.)
Vertical type powder mixer complete with electric motor	1	50,000
Blade type dough mixer	1	70,000
Macroni making machine with die-head	1	80,000
Boiler of 30 ltrs. capacity	1	20,000
Galvanised water storage tanks	3	6,000
Extra die-heads, cutters etc.	--	5,000
Wooden Trays	100	20,000
	<b>Total</b>	<b>2,51,000</b>

## 5.3 Miscellaneous Assets

Other assets like furniture and fixtures, packing tables, plastic tubs, SS utensils, storage racks, weighing scales, polythene bag sealing machine etc. shall be required for which a provision of Rs.60,000/- is made.

## 5.4 Utilities

Water required per day shall be 2000 ltrs. whereas power requirement shall be 25 HP.

## 5.5 Raw and Packing Materials

Maida and tapioca flour are the important materials which will be available from local markets. Quantity required of soda bicarbonate, salt and edible colours will not be much. Printed polythene bags shall be needed for packing. Prior supply arrangements especially for maida and tapioca flour must be made.

## 6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Worker	1	2,500	2,500
Semi-skilled Worker	1	1,750	1,750
Helpers	4	1,250	5,000
Salesman	1	2,500	2,500
		<b>Total</b>	<b>11,750</b>

## 7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	2
Completion of civil work and placement of orders for machinery	6
Erection, installation and trial runs	2

## 8.0 DETAILS OF THE PROPOSED PROJECT

### 8.1 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	250	75,000
Building	125	3,25,000
	<b>Total</b>	<b>4,00,000</b>

### 8.2 Machinery

Total cost of machinery is estimated to be Rs.2.51 lacs as discussed earlier.

### 8.3 Miscellaneous Assets

A provision of Rs.60,000/- would take care of other support assets as explained before.

### 8.4 Preliminary & Pre-operative Expenses

There will be many pre-operative expenses like registration, establishment and administrative charges, travelling, interest during implementation, trial run expenses etc. for which an amount of Rs.65,000/- is earmarked.

### 8.5 Working Capital Requirements

Capacity utilisation in the first year is assumed to be 60% for which following working capital shall be needed:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw Materials	½ Month	30%	0.80	0.56	0.24
Stock of Finished Goods	¼ Month	25%	0.95	0.71	0.24
Receivables	½ Month	25%	1.35	1.00	0.35
Other Expenses	1 Month	100%	0.20	--	0.20
		<b>Total</b>	<b>3.30</b>	<b>2.27</b>	<b>1.03</b>

## 8.6 Cost of the Project & Means of Financing

(Rs. in lacs)

Item	Amount
Land and Building	4.00
Machinery	2.51
Miscellaneous Assets	0.60
P&P Expenses	0.65
Contingencies @ 10% on Land and Building & Plant & Machinery	0.65
Working Capital Margin	1.03
<b>Total</b>	<b>9.44</b>
<b>Means of Finance</b>	
Promoters' Contribution	2.84
Term Loan from Bank/FI	6.60
<b>Total</b>	<b>9.44</b>
Debt Equity Ratio	2.42 : 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 rated production capacity of 120 tonnes per year, actual utilisation in the first year is taken at 60% and thereafter it is restricted to 75%.

### 9.2 Sales Revenue at 100%

With 10% process loss and assuming selling price of Rs.50,000/- per ton, annual income would be Rs.54.00 lacs.

### 9.3 Raw and Packing Materials Required at 100%

(Rs. in lacs)

Product	Qty. (Tonnes)	Price/Ton (Rs.)	Value
Maida	60	21,000	12.60
Tapioca Flour	60	25,000	15.00
Salt, Soda bicarbonate, food grade colours etc.	--	--	3.60
Packing Material	--	--	1.10
		<b>Total</b>	<b>32.30</b>

#### 9.4 Utilities

Annual expenditure at 100% utilisation would be Rs. 60,000/-.

#### 9.5 Selling Expenses

A provision of 17.5% of sales income would take care of selling commission, sales promotion schemes, transportation, sampling etc.

#### 9.6 Interest

Interest on working capital from bank is computed @ 14% per annum whereas on term loan of Rs.6.60 lacs, it is calculated @ 12% per annum assuming complete repayment in 3 years including a moratorium period of 6 months.

#### 9.7 Depreciation

Method applied is WDV and rates assumed are 10% on building and 20% on machinery and miscellaneous assets.

### 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
<b>A</b>	<b>Installed Capacity</b>	<b>--- 120 Tonnes ---</b>	
	Capacity Utilisation	60%	75%
	Sales Realisation	32.40	40.50
<b>B</b>	<b>Cost of Production</b>		
	Raw and Packing Materials	19.38	24.22
	Utilities	0.36	0.45
	Salaries	1.41	1.65
	Stores and Spares	0.18	0.27
	Repairs & Maintenance	0.24	0.36
	Selling Expenses @ 17.5%	5.67	7.10
	Administrative Expenses	0.36	0.48
	<b>Total</b>	<b>27.60</b>	<b>34.53</b>
<b>C</b>	<b>Profit before Interest &amp; Depreciation</b>	<b>4.80</b>	<b>5.97</b>
	Interest on Term Loan	0.65	0.36
	Interest on Working Capital	0.32	0.40
	Depreciation	0.95	0.79
	Profit before Tax	2.88	4.42
	Income-tax @ 20%	0.58	0.88
	Profit after Tax	2.30	3.54
	Cash Accruals	3.25	4.33
	Repayment of Term Loan	1.20	2.40

**11.0 BREAK-EVEN ANALYSIS**

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		<b>32.40</b>
[B]	Variable Costs		
	Raw and Packing Materials	19.38	
	Utilities (70%)	0.25	
	Salaries (70%)	0.98	
	Stores & Spares	0.18	
	Selling Expenses (70%)	3.97	
	Admn Expenses (50%)	0.18	
	Interest on WC	0.32	<b>25.26</b>
[C]	Contribution [A] - [B]		<b>7.14</b>
[D]	Fixed Cost		<b>4.26</b>
[E]	Break-Even Point [D] ÷ [C]		<b>60%</b>

**12.0 [A] LEVERAGES****Financial Leverage**

$$\begin{aligned} &= \text{EBIT/EBT} \\ &= 3.85 \div 2.88 \\ &= 1.34 \end{aligned}$$

**Operating Leverage**

$$\begin{aligned} &= \text{Contribution/EBT} \\ &= 7.14 \div 2.88 \\ &= 2.48 \end{aligned}$$

**Degree of Total Leverage**

$$\begin{aligned} &= \text{FL/OL} \\ &= 1.34 \div 2.48 \\ &= 0.54 \end{aligned}$$

**[B] Debt Service Coverage Ratio (DSCR)**

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr
Cash Accruals	3.25	4.33	4.84
Interest on TL	0.65	0.36	0.15
<b>Total [A]</b>	<b>3.90</b>	<b>4.69</b>	<b>4.99</b>
Interest on TL	0.65	0.36	0.15
Repayment of TL	1.30	2.60	2.65
<b>Total [B]</b>	<b>1.95</b>	<b>2.96</b>	<b>2.80</b>
<b>DSCR [A] ÷ [B]</b>	<b>2.11</b>	<b>1.70</b>	<b>1.96</b>
<b>Average DSCR</b>	----- <b>1.92</b> -----		

**[C] Internal Rate of Return (IRR)**

Cost of the project is Rs. 9.44 lacs.

(Rs. in lacs)

Year	Cash Accruals	24%	28%	32%
1	3.25	2.62	2.54	2.46
2	4.33	2.81	2.64	2.49
3	4.84	2.54	2.31	2.11
4	5.47	2.31	2.04	1.80
	<b>17.89</b>	<b>10.28</b>	<b>9.53</b>	<b>8.86</b>

The IRR is around 28%.

**Some of the suppliers are**

1. Nagpal Brothers, C-127, Phase II, Mayapuri Industrial Area, New Delhi- 110064.  
Tel No. 25400407/02631
2. SP Engg. Works, Fazalgunj, Kanpur
3. Lylapur Engg Co, PB No. 8, Gaziabad , UP
4. Master Mechanical Works Pvt Ltd, 75, Link Rd., Lajpat Nagar III, New Delhi.