# POTATO/BANANA WAFERS

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|---|---|
| PRODUCT | : Potato Wafers (NIC Code 10719) |
| QUALITY AND STANDARDS | : As per FSSAI |
| PRODUCTION CAPACITY | : Qty.: 60 Mt and Value : Rs.76.20 lakhs (Per Annum) |
| MONTH AND YEAR OF PREPARATION | : February, 2021 |
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## 1. INTRODUCTION

In India around 48 million tones of potato is grown which is about 4% of the total world production. However, the per capita consumption of potatoes is low. It is estimated that 25% of the potatoes, which are spoiled due to various reasons such as transportation, type of packing, non-availability of cold storage capacities during harvesting season, glut in the market etc., could be served by making various preserved potato products. Potato wafer is one of such products which has a great potential as this is considered as one of the traditional foods of India. Potato wafers are needed to be made in scientific manner and under hygienic conditions.

Banana is one of the most important fruits in India and occupies about 27.4 thousand hectares area with an annual production of about 42.35 thousand tones. The main banana growing states are: Tamil Nadu, Maharashtra, Kerala and Andhra Pradesh. Banana contains about 20% sugar and reasonable amount of Vitamin A, B and C. This is considered to be a rich source of energy producing food. It is consumed in several forms and preparations and amongst which Banana wafer is considered to be the most important item.

## 2. MARKET POTENTIAL

The popularity of snack foods is growing fast day-by-day and potato and banana wafers have emerged as potential snack food. A number of organized as well as unorganized groups are already there catering to the needs of tea stalls, restaurants, railway stations, tourist places etc. Still there is a huge demand to be met for the products in interior and remote places in different part of the country.

## 3. BASIS AND PRESUMPTIONS

(1) One shift per day and 300 working days in a year at 75% working efficiency.
(2) Five year period is required for achieving full capacity utilization.
(3) Labour wages are as per the rates prevailing in the area.
(4) Interest on Capital Investment 12% p.a.
(5) Payback period: 7 years
(6) Land cost Rs.1000 per sq.m

## 4. IMPLEMENTATION SCHEDULE

A period of 8 months would be required for start of production from the date of approval of scheme. The breakup of the activities with relative time for each activity is as follows:

| | |
|---|---|
| 1. Acquisition of land | 1 month |
| 2. Preparation of Project Report and MSME Registration | 1 month |
| 3. Financial Assistance from Institutions | 1 month |
| 4. Building construction | 3 months |
| 5. Power Connection | 0.5 months |
| 6. Acquisition of Machinery | 0.5 months |
| 7. Installation of Machinery | 0.25 months |
| 8. Appointment of staff and labour | 0.5 months |
| 9. Trial production and shooting problems | 0.5 months |
| 10. Commercial Production | 6th month onwards |

## 5. TECHNICAL ASPECTS

### 5.1. Process of Manufacturing

***Potato Wafers***

The potatoes selected for wafers should be large oval shape free from disease and fully matured. They should have the minimum number of eyes to cut down the losses by trimming. They are washed thoroughly in water and peeled manually with stainless steel Knife or by means of an abrasive potato peeling machine. The peelings are washed away with sprays of water. They are then trimmed and placed in water to prevent browning. They are sliced 0.4 to 0.5 cm. thick in a slicing machine. The slices are again placed in cold water whenever there is considerable delay in the subsequent operations of blanching. Then slices are kept in water containing 0.05% potassium meta bisulphate to avoid oxidation. The slices are blanched for 5 seconds in boiling water and spread on trays at the rate of 4.88 Kg to 7.50 Kg. per square metre of tray surface. The blanched chips are then subjected to hydro-extracting machine (centrifugal) to remove excess of water and fried in edible oil at 180-240$^0$C, for 0-4 minutes. The fried potato wafers are then kept on the sieve to remove excess of oil, cooled and other ingredients like salts, spicy mixture is sprayed as per required taste. Cooled potato wafers are then packed in polythene bags and sealed.

*Banana Wafers*

Matured bananas are washed, peeled and sliced. The bananas thus prepared are then dipped in brine water to avoid oxidation. Sometimes turmeric powder is also used for colouring the banana chips or to improve colours.

The banana chips are fried in vegetable oil and cooled down to the room temperature. These wafers are then packed in polythene bags of suitable guage and sizes to prevent spoilage.

### 5.2. Quality Control and Standards

Unit must take FSSAI License and the product must meet FSSAI Standards.

### 5.3. Production Capacity (per annum)

Quantity : 60 MT
Value : Rs.76.20 Lakhs
Motive Power: 20HP

### 5.4. Pollution Control

The unit will not create any pollution problems. However, entrepreneur should obtain NOC from concerned State Pollution Control Board.

### 5.5. Energy Conservation

Suitable measures should be adopted to use appropriate amount of fuel and Electricity.

## 6. FINANCIAL ASPECTS

### 6.1. FIXED CAPITAL

#### 6.1.1. Land & Building

Land 250 Sq. mtr. @ Rs.1000/- Rs.2,50,000

**Built up Area**

| Description | Size | Area (Sq.ft.) |
|---|---|---|
| Production Hall | 30′ x 20′ | 600 |
| Stores | 20′ x 20′ | 400 |
| Finished Goods Stores | 20′ x 20′ | 400 |
| Laboratory | 10′ x 10′ | 100 |
| Office | 10′ x 10′ | 100 |
| Total | | 1600 |

Cost of Construction @ Rs.250 per Sq.ft Rs.4,00,000

**6.1.2 Machinery and Equipment**

| Description | Rate (Rs.) | Nos. | Amount (Inclu. GST) (in Rs.) |
|---|---|---|---|
| Potato Peeler (body and chamber of stainless steel) cap. Per charge 15 Kg. taking 3 to 4 minutes complete with motor | 25,000 | 1 No. | 25,000 |
| Power operated slicing machine with arrangements to adjust the thickness of slices with motor | 30,000 | 1 No. | 30,000 |
| Hydro extractor to extract excess of moisture with motor | 15,000 | 1 No. | 15,000 |
| Deep fat fryer (oil tank of stainless steel, electrically heated, temp. control switch) | 33,000 | 1 No. | 33,000 |
| Polythene bag Sealing Machine | 16,000 | 1 No. | 16,000 |
| Salting drum | 17,000 | 1 No. | 17,000 |
| | | **Total** | **1,36,000** |

Erection and Electrification 10% Rs.13,600

Aluminium Table, Plastic Carry Containers etc. Rs.27,000

Furniture and Fixtures Rs.40,000

Pre-operative Expenses (Establishment cost, legal expenses, Consultancy fee, startup expenses, Interest during construction period, Trial run expenses) Rs.30,000

**Total Fixed Capital requirement** **Rs.8,96,000**

## 6.2. Working Capital (per month)

### 6.2.1. Raw material

| Description | quantity | Rate | Total (Rs.) |
|---|---|---|---|
| Potatoes/Bananas | 25MT | 10,000 | 2,50,000 |
| Ground Nut Oil | 2.5 MT | 80,000 | 2,00,000 |
| Flavours, chemicals, spices etc. | LS | | 5,000 |
| Packaging material | LS | | 10,000 |
| | | **Total** | **4,65,000** |

6.2.2. **Personnel**

| Description | Nos. | Salary/Month (Rs.) | Total (Rs.) |
|---|---|---|---|
| Manager | 1 | 20,000 | 20,000 |
| Sales Supervisor | 1 | 12,000 | 12,000 |
| Clerk | 1 | 5,500 | 5,500 |
| Skilled Worker | 1 | 5,000 | 5,000 |
| Unskilled Workers | 1 | 4,000 | 4,000 |
| | | **Total** | **Rs.46,500** |
| **Perquisites 10%** | | | **Rs. 4,650** |
| | | **Total** | **Rs.51,150** |

### 6.2.3. Utilities

**Water : Rs. 3,000**
**Electricity : Rs. 5,000**
**Fuel : RS. 3000**
**Total : Rs.11,000**

### 6.2.4. Miscellaneous Expenses (Other Contingencies)

**Consumable Stores : Rs.3,000**
**Maintenance and Repairs : Rs.2,000**
**Transportation & Travelling : Rs.7,000**
**Insurance : Rs.1,200**
**Other Expenses : Rs.7,500**
**Total : Rs.20,700**

**6.2.5. Total Recurring Expenditure : Rs.5,48,400**

**6.3. Total Capital Investment**

| | | |
|---|---|---|
| **Fixed Capital** | : | **Rs. 8,96,600** |
| **Working Capital** | : | **Rs.16,45,200** |
| **Total** | : | **Rs.25,41,800** |

## 7. FINANCIAL ANALYSIS

7.1. Cost of Production per annum

| Sl.No. | Description | Amount (Rs.) |
|---|---|---|
| 1. | Recurring Expenses | 65,80,800 |
| 2. | Depreciation on Building 5% | 20,000 |
| 3. | Depreciation on Machinery 10% | 13600 |
| 4. | Depreciation on Furniture 20% | 8000 |
| 5. | Interest on total capital@12% | 305016 |

**Total Rs. 69,27,416**

**Say Rs. 69.27 lakhs**

## 7.2. Turnover per annum

| Sl.No. | Item | Qty. (Kg.) | Rate (Rs./Kg.) | Value (Rs.) |
|---|---|---|---|---|
| 1. | Potato/Banana | 60,000 | 127 | 76,20,000 |

**7.3. Profit (per annum)**

= Turnover – Cost of Production (76.20 – 69.27)

= **Rs.6.93 lakhs**

**7.4. Net Profit Ration**

$$= \frac{\text{Net Profit per year}}{\text{Turnover per year}} \times 100$$

$$= \frac{6.93}{76.20} \times 100$$

$$= 9.09\%$$

### 7.5. Rate of Return

$$= \frac{\text{Profit} \times 100}{\text{Total Capital Investment}}$$

$$= \frac{6.93 \times 100}{25.418} = 27.26\ \%$$

### 7.6. Break-even Point

| Annual Fixed Cost | Total (Rs. In lakhs) |
|---|---|
| 40% Salaries | 2.46 |
| 40% Utilities | 0.52 |
| 40% other contingencies | 0.99 |
| Total Depreciation | 0.42 |
| Total Interest | 3.05 |
| **Total** | **7.44** |

**Break-even Point**

$$= \frac{\textbf{Annual Fixed Cost x 100}}{\textbf{Annual fixed cost + Profit}}$$

$$= \frac{\textbf{7.44 x 100}}{\textbf{7.44 + 6.93}}$$

$$= \textbf{51.77\%}$$

**Say 52%**

## Addresses of Machinery and Equipment Suppliers

1. **M/s. The Metal Box Co. of India**
   Allahabad Bank Building,
   Connaught Circus,
   New Delhi – 110001

2. **M/s. Revion Metal Work**
   295, Ballasis Road,
   Mumbai – 400008

3. **M/s. Dornow Food Technology**
   Carl Bornow and Sohy, Kaiser tried,
   Rich Ring, 96, D-4000
   Dusseldort,
   West Germany

4. **M/s. Batliboi and Co. Pvt. Ltd.**
   BP.B.No.190, 4, Port,
   Mumbai-1

5. **M/s. Textile Machinery Corporation Ltd,**
   Boiler Factory,
   Royal Exchange Palance,
   Kolkata

**Raw Material suppliers**

Local Market