PROJECT REPORT

Of

BREAD MAKING

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Bread Making Unit**.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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DIFFERENT TYPE OF BREADS

Whitbread

The most common variety of bread is white bread. It is made from wheat flour (extraction rate of 77%) and is made into many different sizes, shapes and textures. Ingredients such as other cereal or vegetable flours, seeds, herbs or a mixture of these can be added

Whole meal or Whole Wheat Bread

Made from whole meal flour (contains all the components of the grain -close to 100% extraction rate),it has become more popular with increasing knowledge of the health benefits of bran and wheat germ.

Mixed grain bread

May be made from any combination of flours (e.g. wholemeal or white flour, rye meal or flour), grains (e.g. kibbled grains, wheat germ, whole grains or wheat and other cereals) and seeds (e.g. sesame seeds).

Kibbled wheat and cracked wheat bread

Contains or is rolled in kibbled (cracked) wheat grains.

Fibre-increased white breads

Made with the addition of bran or other fibre-containing material.

Rye bread

Made from a combination of rye flour and wheat flour. Dark rye bread contains a higher proportion of rye flour and rye meal than light rye and is consequently denser, heavy and has a stronger flavor. Pumpernickel is heavy, dark bread made from rye flour, rye meal and kibbled or cracked rye grains.

Sourdough bread

Sourdough bread has a slightly sour flavour and a denser texture than regular bread. Sourdough describes the raising agent used to make this type of bread. A starter, made from a mixture of flour and water, serves as a medium for growing either commercial yeast that is added to the mixture or the ever-present wild yeast that is captured by the mixture from the air we breathe. (Yoghurt is also sometimes added to provide yeast.) This mixture is allowed to sour through a fermentation process that produces a gas and an acid. It is then used as a starter to leaven other breads; the gas produced by the fermentation is trapped in the elastic gluten structure of the dough, causing it to rise, while the acid imparts the final product with a tartflavour.

Damper

Traditionally baked in the Australian bush, damper is a chemically leavened white,roundbread.

Lavash bread

A thin, flat bread made from white wheat flour, yeast, salt and water which is oven-baked on a heated metal plate.

Bagel

A Jewish bread where the dough (with yeast) is shaped into a ring and thrown into boiling water before baking. This gives the crust a chewy texture. It may be coated with poppy or sesame seeds and can be flavoured, e.g.raisinandcinnamon.

Middle Eastern flat, pocket or pita bread

Flat, oval or round wheat bread made from flour, water, yeast and salt. The "pocket" in some breads is made by resting the flattened pieces of dough under dry conditions so that both sides become slightly drier than the centre. During baking at high temperature, the steam produced inside the dough is trapped by the baked, drier outside layers. The pocket can also be stuffed with various fillings. The Turkish version of pita bread is pide.

Naan

Made in India, Pakistan and Afghanistan, naan is a wheat-flour bread leavened with a starter of the sourdough kind and cooked in a clay Tan door oven. The clay and the smoke in the tandoor combine to produce a characteristic flavor. The bread is flattish and has a crisp crust.

Chapatti(chapatti)

Sometimes called roti, chapatti is served throughout India, Pakistan and also Iran. They are made from finely milled wholewheat flour, called atta. The dough is rolled into thin rounds which are cooked in an iron pan or on a griddle. They are made every day in North India where they are used as a plate to hold other food, curved to scoop up food or used for dipping in soupsorsauces.

Paratha or parata

An Indian flaky bread prepared by smearing the unleavened dough with ghee or oil and then folding the dough. This procedure is repeated three times. The dough is then rolled out and fried in oil or dry cooked on a griddle.

Chinese steamed bread

Eaten in most countries of east Asia, Chinese steamed breads are shaped like a ball and have either no filling, a sweet bean paste or a meat filling. Lao bing is a Chinese-style flat bread which is baked in a pan until both sidesaregoldenbrown.

Chinese buns and dumplings

Buns and dumplings are common in north and South-East Asia. Manju, the generic term for steamed Japanese buns, are either lightly baked or steamed

buns prepared by steaming a fermented dough with a pork, curry or sweet bean paste filling. In northern China, mantou is a steamed leavened bread without a filling, eaten as a staple in place of rice. Yit bien or moon cake is a baked bun filled with nuts and seeds popular amongst Chinesepopulations.

Mantou or mantu describes the food category of dumplings in Asia. They resemble ravioli and are stuffed with meat and/or vegetables and beans.

Gluten-free bread

Gluten-free bread is usually based on corn flour to which flour from gluten-free grains (such as rice and maize), potato or pulses is added. Gluten-free bread has a denser, more crumbly texture than traditional bread, since the presence of gluten is essential for the typical structure and texture

Bread Manufacturing

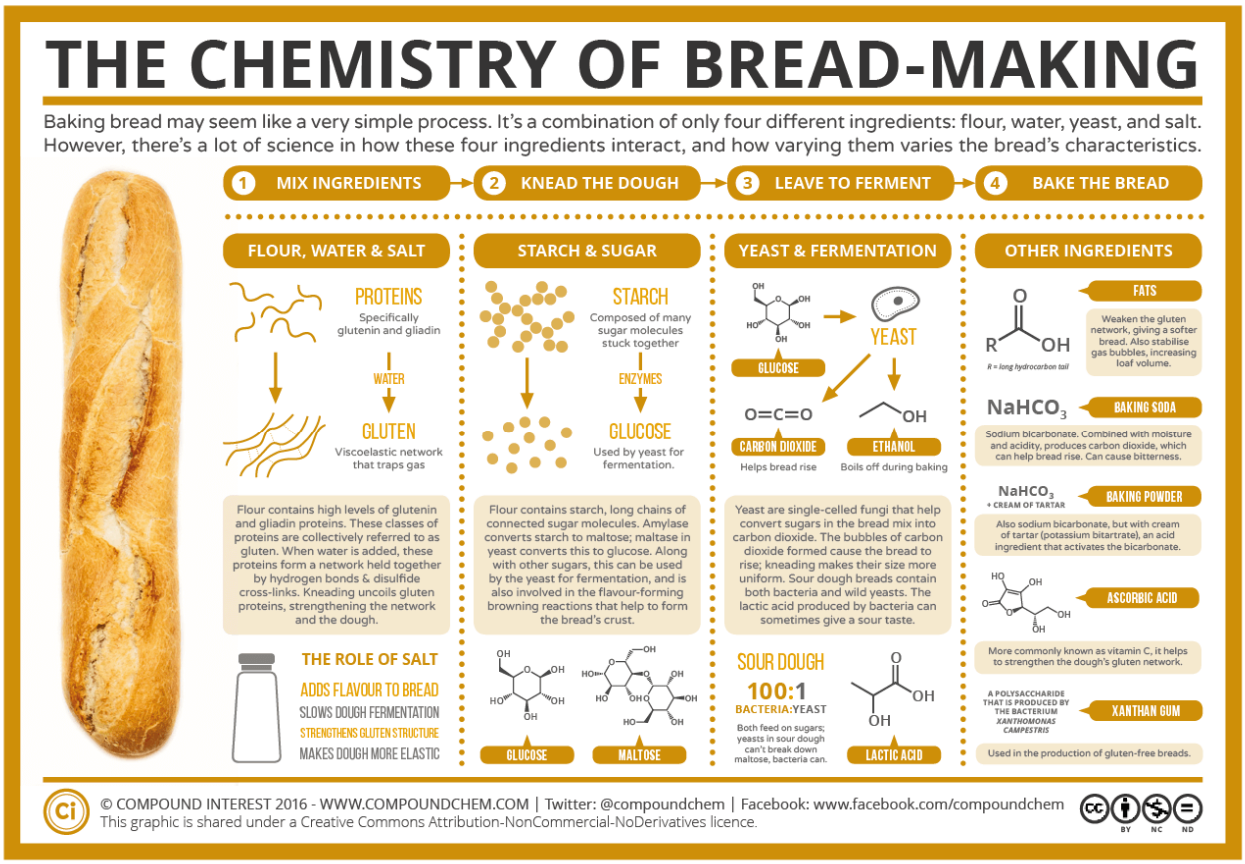
Bread manufacturing profession is as old as starting of human civilization .It is oldest profession when every house having its own bakery. Now with mechanization and with new technology breads are manufactured in mass scales.

World over we can find thousands of bakeries preparing Variety of breads .We label bread with various names like bread , loaf , roti , kaboos etc

BREAD MANUFACTURING PROCESS -STAGES

- Preparation of ingredients
- ·Dough mixing
- ·Bulk fermentation, sponge time
- ·Dividing (scaling)
- ·Rounding
- ·Moulding
- ·Panning
- ·Baking
- ·Cooling
- ·Slicing and packaging

BREAD MAKING PROCESS FLOW IN AUTOMATED BREAD PLANT



MIXING

Mixing starts with sifting flour with help of vibratory sifter .Flour is then collected in bowl and then weighed .All ingredient are then added in bowl .Ingerients are flour , sugar ,fat ,salt, yeast, g ms powder, sodium stearoyl lactilate, smp solution ,bio-bake , Improvers, ammonium chloride , ascorbic acid , cystiene ,pot.bromate,calcium propianate and acetic acid .These are added in std proportion as per requirement .

After addition of all ingredients bowl is moved to spiral mixer where is done Water is added in different quantities .Mixing time depends on quality of flour in

general mixing time can vary from 6- 12 min .under mixing and over mixing can have direct impact on dough consistency .Dough quality can be checked with stretching the dough .dough temperature is maintained
between 80 deg f - 82 deg f.

FORMING

On completion of mixing dough bowl is lifted through tilting hoist and from the hoist bowl is tilted so as dough goes into hopper of Divider Hopper .

DIVIDER

Dough is cut into two equal dough piece .Its a mechanical device which uses a common crank to cut , push and drop dough piece through divider to conveyor .Volume of the dough piece can be adjusted at divider . Divider is defined as no of dough piece per min.

HANDERUP

From divider the dough piece moves to hander up which is mechanical device conical in shape on which dough piece takes curvilinear path .It has got blower attached to it which continuously provides air on the path .Basic function of hander up is to give dough piece spherical shape and remove moisture from surface from dough piece .

INTERPROOVER

Dough pieces are then transferred to buckets of interposer .Here dough piece are allowed to travel for 5- 6 min .This helps in relaxation of dough as it would have stress due to mechanical action on it at divider.

MOULDER

It has three set of roller. The dough piece is allowed to pass through these rollers .Now dough piece are slightly flattened.

PRESSURE BOARD

Dough piece are turned and fed into pressure board where it takes cylindrical shape .Air is passed through the board.

FINALPROOVER

These dough pieces are then carried to platform where these lobes are twisted and kept in moulds ,two lobes are twisted in one mould box as per wt required like 400 g ms or 800gms loaves . Mould box are greased prior to lobes being put into. Final proover has arrangement for steam which spreads uniformly in entire chamber. Temperatures at final proofer is maintained between 36-38deg c. Humidity and temperature are maintained so as to get maximum of yeast activity .Precautions are taken to see if there is over or under development of dough . Speed can be varied at final proofer.

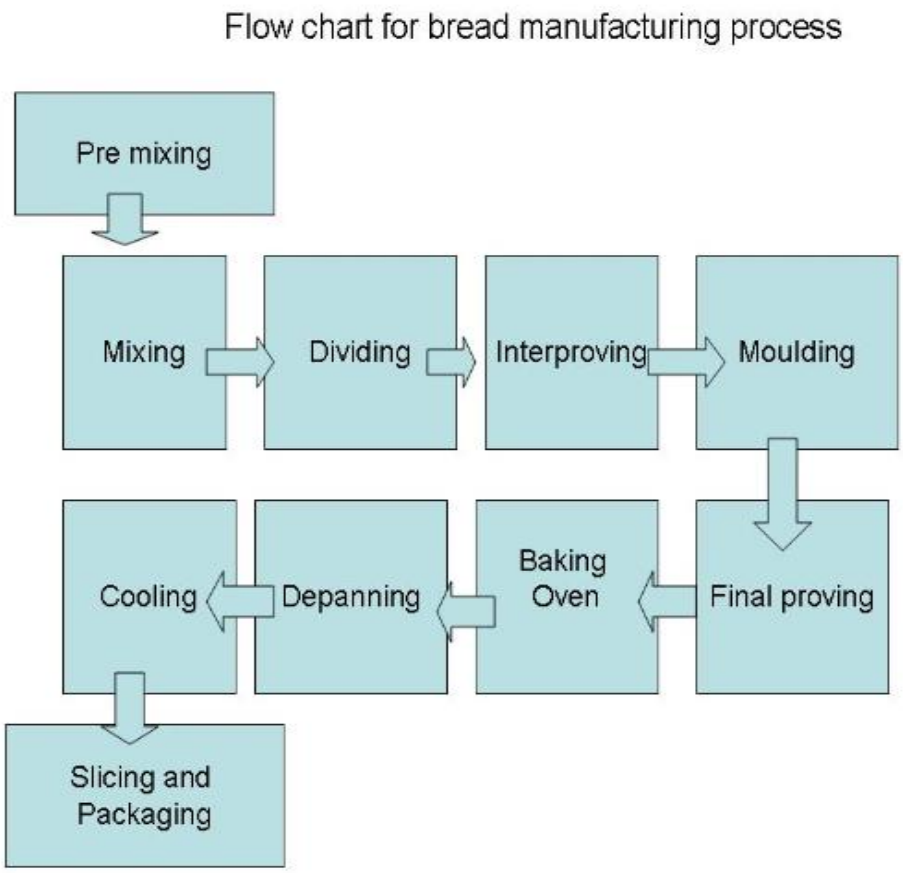
Dough should rise 3/4 th of the mould . vol of mould is 1320cc for 400gm and 2700cc for 800 gm loaves . Travel of trays is longitudinal in swing tray type plant where as in contrary type it is vertical .

Proving time =75 min

Depending upon design we can define capacity of final proofer as

cap/cycle : no of loaves .no of racks x no of moulds box per rack x no of mould in each box .

Bread Manufacturing Process-Flow Chart



Machines & Equipment used in Bread Manufacturing

MIXERS.




FLOUR SIFTER

DOUGH ELEVATOR

HANDER UP

OVENS

BURNERS

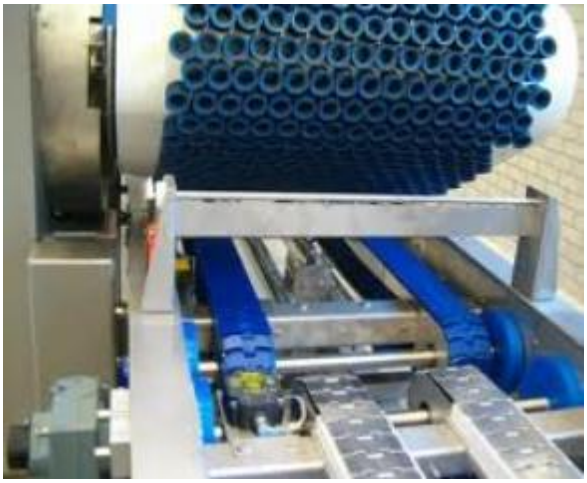
DIVIDER

MOULDER

INTER PROOFER & FINAL PROOFER

PRESSURE BOARD

DEPANNER



SLICER

MOULDS & PANS

PRINTERS AND CODERS

PACKING MACHINE

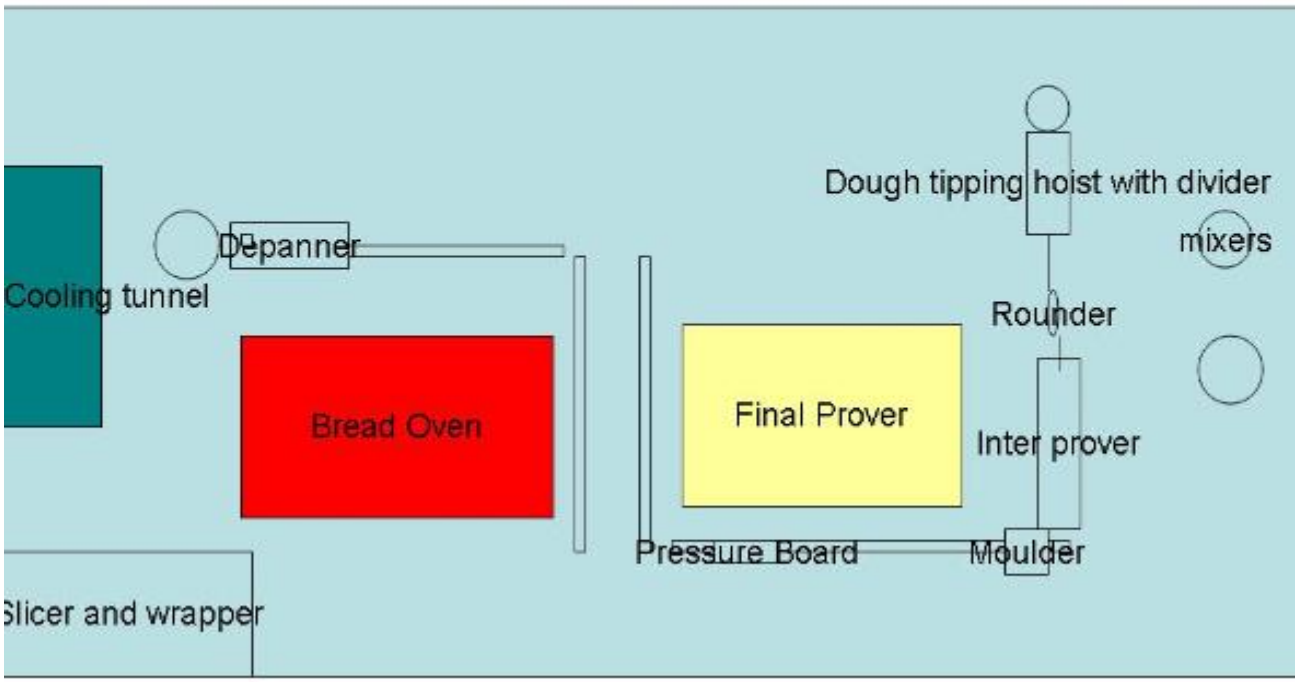
AUTOMATED BREAD PLANT LAYOUT

Bread plants layout consists of mixers , dough elevators , divider ,hander up ,inter prover , moulding , final prover , oven , de-paner and cooling tunnel .

Point s to keep in mind while planning for bread plant layout.

- Mixer with dough elevators or gravity tipping.
- Final prover loading manual or automatic.
- Oven to be either tunnel type or swingtray as per requirement.
- Oven Loading to be manual or automatic.
- Cooling tunnel to have at least 2- 3 hours cooling time .
- Ventilation of the baking hall.

Bread Plant Layout



Role of Ingredients.

Various Ingredients are used in Bread and Biscuit manufacturing .Each Ingredients has specific role to play during manufacturing process .

Sugar

Primary role of sugar in bread and biscuit is provide sweetness(taste) to the product .Color to the product due to carmalisation .Color of the crust in bread loaves is due to the sugar .Basic role of sugar is to activate the yeast to produce carbon dioxide and alochol during bread manufacturing .Note: When preparing for mixing yeast is separately being put into ammonium chloride and sugar solution .

Hydrogenated Vegetable Oil -(HVO)

Main function of HVO is to retain the moisture inside the dough.Give smoothness to the bite .

Salt

It provides taste to the product .Salt act as controlling agent against wild yeast activity .Thus controlled yeast activity can provide better texture or network .

GMS (Glycerol Mono stearate)-

Its act as emulsifier which binds together the oil and water molecules and it helps bread to hold moisture .

SSL (Sodium Stearoyl lactilate)-

It is also known as Smoother .It is a compound which retains softness in bread and delays staling of bread .

SMP (Skimmed Milk Powder)-

Solution-Main function of Skimmed milk powder is to give flavour to the product and sweetens the product.

Ammonium Chloride-

Ammonium chloride provides Nitrogen which used to activate yeast in presence of water and sugar.

Yeast-

It is an unicellular living organism .Its growth is max at higher humidity and temperature 45 deg c .Yeast action on food releases carbon dioxide which gets entrapped in dough and gives puffiness to the product after baking .Yeast are used for sour dough products or Sponge dough products . Sponge are prepared in cracker production yeast is added during mixing are then kept for 18-20 hrs before production.

Commercial yeast are of two types - Compressed yeast and Dry yeast

Compressed yeast - These can be further classified as

Breweries yeast - It acts on malt to give alcohol and carbon dioxide.
Distillers yeast- It acts on molasses to give alcohol and carbon dioxide .

Baker's yeast - It acts on sugar to produce carbon dioxide and alcohol. Carbon dioxide is the main by product.

Other features of compressed yeast

Its available in cake form. It s cheaper than dry yeast. Moisture content is 80% Life of compressed yeast is 5 days. Cell usage is 90-95%.

Dry Yeast.

Its costlier than Compressed yeast. It s is available in powder form. Moisture is around 5% .Life of dry yeast is more than one year. Cell usage around 60%.

Implementation Schedule

Activity		No of Months
1.	Arrangement of land, Registration, approval of loan and other formalities	2
2	Site development, fencing and civil construction.	1
3	Machinery procurement	2
4	Erection and commissioning	1
5	Trial-cum-commercial production	1

Financial Aspects.

Cost of Project

S.NO.	PARTICULARS	AMOUNT
1	Land 1000 sq mts @ 550	5.50
2	Land development and fencing	2.50
3	Main factory building 600 mts@ Rs 3000 sq mtr other construction	18.00
4	Cost of moulds/other fixtures	0.70
6	Cost of office equipment and furniture	1.50
5	Margin for Working Capital	10.40
6	Preoperative exp	2.50
	Total	41.10

Means of Finance

S.NO.	PARTICULARS	AMOUNT
1	Own Contribution	13.56
2	Term Loan	22.00
3	Unsecured Loan	5.54
	Total	41.10

Production Capacity (Per Annum)

S.NO.	PARTICULARS	Production/yearin meter	Weight/meter)	Quantity(Tonnes)
1	Bread	30 lacs loaves of 400 gm		30 lacs loaves of 400 gm

TOTAL CAPITAL INVESTMENT

			Rs.
1	Total Fixed Capital		47.62
2	Working Capital for 3 Months		41.58
	Total		89.20

Fixed Capital.

Land and building			Amount(In Rs.lacs)
Land and building			26.00
(Workshop, Office and store) (per month)			
Other furniture & Fixture			2.20
Machinery and Equipment			
Description	**Qty. nos.**	**Price/unit**	**Amount(In Rs lacs.)**
Auto flour sifter with capacity to sift 2 bags per 5 minute complete with 0.373 kw motor and other accessories	1		0.4
Water measuring tank (S.S.) capacity 100 liters with all accessories	1		0.15
100 kg capacity double armed type dough kneader with 1.5 kw motor	1		1.2
M.S. extra tub	2		0.12
Single pocket slow speed dough dividing complete with 1kw motor	1		0.8
First prove rounder table type with 0.46 kw motor	1		0.3
Conical umbrella type rounder complete with 1.12 kw motor and suitable reducing gear box	1		0.6
Bread dough straight through molder with 1.5 kw geared motor and switches	1		0.6
Tunnel type final prover over all size 6' x 6' long double walled complete with recirculation fan 1 HP and with 1 HP automatic arrangement of mechanical pushing trolleys through the tunnel	1		2
Proofing Racks A set of 8 No. for final proofing	1		1
Oil fire travelling type of oven having capacity of 1000 loaves charge having 1 HP main drive motor , 3 HP recirculation fan another 1 HP driven exhaust fan complete with medium pressure burner	1		3.75

Hot loaves collection table 6' diameter turntable having sunmica dop driven by 1 HP motor	1		0.3
Slit conveyer for pan returned from oven to moulding area driven by 1 HP motor	1		0.8
Slicing machine output 500-600 loaves per hour with 0.746 KW motor	3		0.75
Wrapper sealing machine 8 simmer state 5 heaters 1.5 KW load	3		0.18
Bread cooling racks	8		0.6
Bread mould set of 3 pans with lid			0.45
Refrigerated cabinet for storing compressed yeast upto 200 kg capacity fitted with 1 HP 3 phase motor			0.25
Coal Fired baby boiler of capacity 200 kg steam/hr complete with all fittings	1		0.4
6' cotton canvas conveyer driven by 0.37 KW motor	2		0.3
Testing Equipment	LS		0.5
Pollution control equipment			Nil
Energy conservation facilities/equipment			Nil
1 Cost of power connection			0.5
2 Electrification and installation charges @ 10% of the cost of machines and equipments			1.27
Cost of Moulds/other fixtures			0.7
Cost of office equipments and furniture etc.			1.5
Total Fixed Capital			**47.62**

Total Working Capital. Rs in lacs

Salary and Wages		(i)		1.81
Raw Material		(ii)		10.53
Utilities		(iii)		0.61
Other Contingent Expenses		(iv)		0.91
Total				13.86
Working Capital for 3 months				41.58

Staff & Labour Expenses.

Designation	No.	Salary(Rs.)		Total (In. Rs.)
Manager	1	18,000.00		18,000.00
Supervisor cum chemist	1	15,000.00		15,000.00
Mechanical supervisor	1	12,000.00		12,000.00
Accountant Senior	1	10,000.00		10,000.00
Sales cum purchase clerk	2	10,000.00		20,000.00
Skilled Worker	4	9,500.00		38,000.00
Unskilled Worker	8	8,500.00		68,000.00
Peon cum watchman	1	7,500.00		7,500.00
Total	18			181,000.00
Total Monthly Salary(In lacs)				1.81

Raw Material Expenses

Particulrs	Rate(Rs)	Quantity(Tonnes)		Total (In. Rs.)
Flour	8.5	92		7.82
Sugar	14.5	2.76		0.40
Salt	4	1.4		0.06
Dry Yeast	150	0.7		1.05
Chemical and additives	0	LS		0.40
Packaging materials	0	LS		0.80
Total Expenses in a month			(In lacs)	10.53

Calculation of Power Expense.

COST OF POWER		
(I) Cost of power from UPPCL		53,620.00
(@7/- per Unit)		
Add: Water		0.01
Add : Lubricants		0.07
Total Annual Power Expense(In Lacs)		**0.54**

Other Contingent Expenses

Particulars				**Amount(In.Rs)**
Repair and Maintenance				5000.00
Postage and Stationery				1500.00
Telephone Charges				8500.00
Transporatation and Freight				15000.00
Insurance				30000.00
Sales Expenses				20000.00
Other Maufacturing Expenses				3500.00
Miscellaneous Expenses				7800.00
Total				91300.00
Total in lacs				0.913

Cost of Production.

Particulars			**In. Rs.**
Total Recurring Expenditure			165.42
Depreciation on Building @ 10%			1.80
Depreciation on Plant and Machinery @ 15%			2.58
Depreciation on Other Tools and Fixtures @ 15%			0.11
Depreciation of Furniture/Fixture & Office Equipment @ 10 %			0.15
Finance Cost			8.24
TOTAL COST OF PRODUCTION(In Lacs)			178.30

Turnover (Per Annum)

Particulars	Production (meter)	Qty(Nos.)	Unit Rate (in Rs)	In. Rs.
	30 lacs loaves of 400 gms		6.50	
TOTAL TURNOVER		Or Say in lacs		195.00

16.70

Profit [ii-i]

Percentage profit on sales 8.56%

Ratios

Rate of Return on Total Capital Investment

= Net Operating Profit/ Invested Capital

= 19%

Return on Assets

= Sales/Average total Assets

= 0.35

Return on Equity

= Sales/ Stockholder's Equity

= 1.23

Debt to Equity Ratio

= Total Term Liabilities/Total Shareholder's Equity

= 1.62

Interest Coverage Ratio

= Earnings before Interest & Tax/ Interest Expense

= 3.03

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