PROJECT REPORT

Of

FROZEN YOGURT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding frozen yogurt Manufacturing 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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PROJECT AT GLANCE

1	**Name of Proprietor/Director**	XXXXXXXX	
2	**Firm Name**	XXXXXXXX	
3	**Registered Address**	XXXXXXXX	
4	**Nature of Activity**	XXXXXXXX	
5	**Category of Applicant**	XXXXXXXX	
6	**Location of Unit**	XXXXXXXX	
7	**Cost of Project**	15.42	Rs. In Lakhs
8	**Means of Finance**		
i)	**Own Contribution**	1.54	Rs. In Lakhs
ii)	**Term Loan**	9.54	Rs. In Lakhs
iii)	**Working Capital**	4.34	Rs. In Lakhs
9	**Debt Service Coverage Ratio**	3.95	
10	**Break Even Point**	27%	
11	**Power Requiremnet**	30	KW
12	**Employment**	10	Persons
13	**Major Raw Materials**	Milk & yogurt culture,sugar and stabilizers	

14 Details of Cost of Project & Means of Finance

Cost of Project **Amount in Lacs**

Particulars	**Amount**
Land and building	Owned/Leased
Plant & Machinery	9.10
Furniture & Fixture	-
Other Misc Assets	1.50
Working Capital Requirement	4.82
Total	**15.42**

Means of Finance

Particulars	**Amount**
Own Contribution	1.54
Term Loan	9.54
Working capital Loan	4.34
Total	**15.42**

1. INTRODUCTION

Frozen yogurt is a refreshing, tangy dessert that combines the flavors and textures of ice cream and sherbet. Frozen yogurt offered a tangier flavor than ice cream and more depth in flavor and texture than sherbet. Frozen yogurt has several key ingredients, starting with ultrafiltered skim milk. The process to make frozen yogurt is nearly identical to the ice-cream-making process, with the exception that yogurt is added to the mix. Frozen yogurt is a relative newcomer in the dessert market. The history of frozen desserts dates back thousands of years to Asia where water ices were first made. Although Roman literature describes how Emperor Nero was treated to exotic fruit juices and wines chilled with mountain snow, it was not until the 13th century that Marco Polo introduced Asian water ices to Italy. The popularity of these frozen desserts spread throughout Europe and within a few centuries, European colonists introduced ice cream in the U.S. Dessert makers had long experimented with a variety of ice cream flavors and styles. In the 1970s, frozen yogurt's entry into the dessert market was a distinct failure—consumers complained that it tasted too much like yogurt. Despite the initial reaction, manufacturers reformulated and refined their frozen yogurt recipes, and the increasingly health-conscious populace of the 1980s finally took to the low-calorie dessert with a vengeance. Frozen yogurt was soon available in a variety of flavors throughout the U.S. It proved to be just as versatile as ice cream, served in cones and cups, with toppings, on crepes, waffles, and banana splits. Technological improvements throughout the 1800s simplified the process of making frozen desserts.

2 PRODUCT DESCRIPTION

2.1 PRODUCT USES

Frozen yogurt is seen more and more as a sweet and delicious alternative to ice cream.

2.2 MANUFACTURING PROCESS

This process can be broken down into the following steps-

Raw material procurement

Frozen Yogurt Making Process

Packing

Testing

Raw Material Procurement

The raw materials are checked strictly as per established quality standards and requirements. Individual supplier assessment and supplier rating are done depending upon the rejection levels at the incoming quality control stage. Sorting of raw material will be done. And it will be stored in a neat and chilled area.

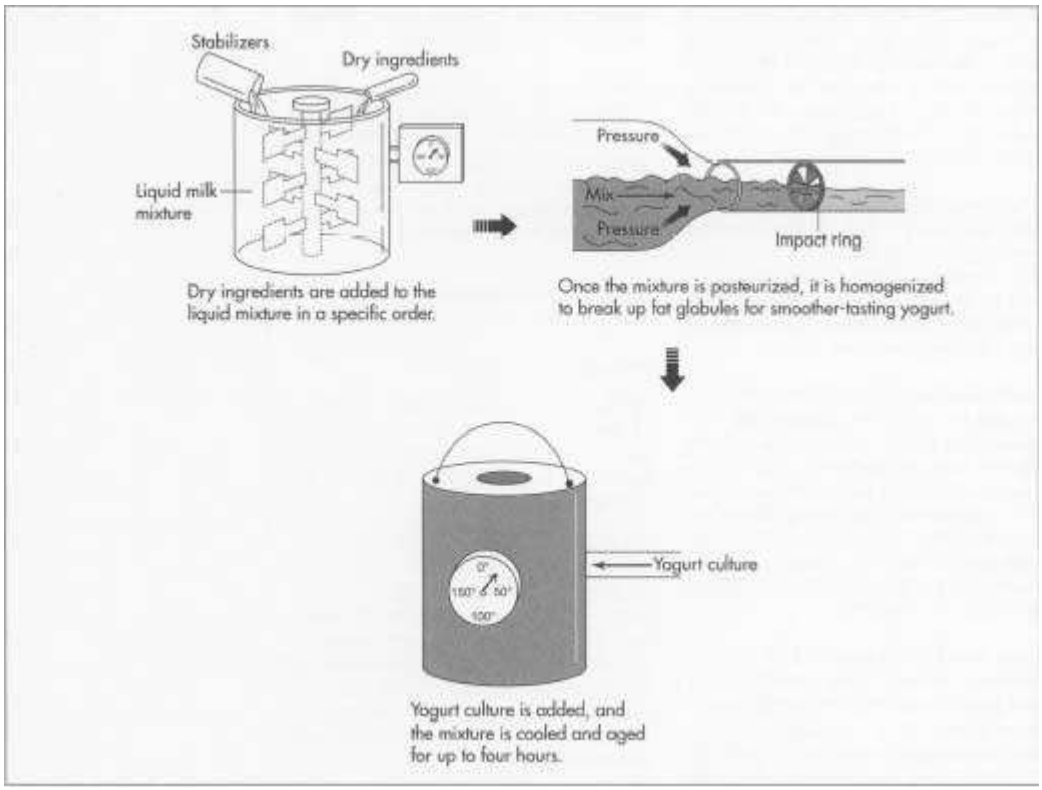
Frozen Yogurt Making Process

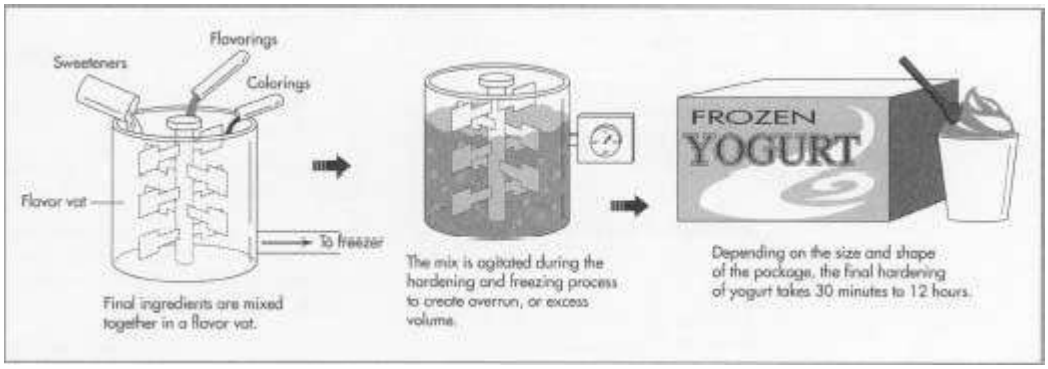
1. **Processing the mix:** The frozen yogurt-making process begins with milk and cream receiving. This step involves metering the milk or cream. A quality control lab can also determine at this point if the milk is acceptable with regards to temperature, taste, and bacteria. The ingredients are selected for freshness and quality. They are measured in precise quantities according to the particular recipe. Liquid and dry ingredients are combined separately. The liquids are poured into a vat, mixed, and heated. Next, the dry ingredients are added to the liquids in a particular order. Meanwhile, the batch is stiffed and the temperature gradually increased. Most ingredients must be incorporated before the mix is heated to 120°F (49°C) so that the mix does not become lumpy. The mixture must be heated to dissolve and blend the ingredients. To concentrate the milk, ultrafiltration is used. To prepare the ice cream mix portion of the frozen yogurt mix, several ingredients must be mixed, pasteurized, and homogenized.
2. **Pasteurizing the mix:** Pasteurizing the batch is necessary to destroy pathogenic bacteria and to help preserve the finished product. It is also required by law in most regions. Pasteurization is a simple process that involves quickly bringing the mix to a high temperature for a specified time and then quickly reducing the temperature to less than

40°F (4°C). The trend in the industry has been toward increasing the pasteurization temperature to about 175°F (79°C) for about 25-40 seconds. For greater results, batches can be pasteurized at temperatures as high as 210°F (99°C) to 220°F (104°C). These high temperatures also improve the flavor and help blend the ingredients more effectively.

3. **Homogenizing the mix:** Homogenizing the batch makes it smoother, primarily by decreasing the size of fat globules to less than two micrometers. Without homogenization, fat could rise to the top of the mixture and create a layer of cream. Homogenization consists of pumping the batch through a small valve and against an impact ring. Three forces are atwork. As the mix passes at a high velocity of about 30,000 fpm (feet per minute) through the valve, shear forces begin to break up the fat particles. The impact ring ruptures the fat further. Completing the process is cavitation, in which vapor bubbles are created by a sudden discharge of pressure. Within the bubbles the fat droplets crash against the vapor walls and disintegrate; thus, the more fat, the more homogenization required.
4. **Inoculating with yogurt culture:** While the temperature of the mix is 90°F (32°C), it is inoculated with 1% yogurt culture. The mix remains at this temperature until it sets and is ready for cooling.
5. **Cooling and aging:** After homogenization, the mixture must be cooled. If it is cooled slowly from about 90°F (32°C) to about 40°F (4°C), the mix will become more viscous. Once the temperature falls between 32°F (0°C) and 40°F (4°C), the batch is stored in aging tanks inside coolers. The mix is aged for up to four hours.
6. **Flavoring, coloring, and freezing**: The final ingredients are mixed in a flavor vat. These include sweeteners, flavorings, and coloring. This mixture is then pumped into the freezer with the rest of the mixture which is about 20°F (-6°C) to 28°F (-2°C). While the mix is hardening, it is agitated to incorporate air and create over-run, or excess volume. The addition of air also smoothes the consistency and creates a more palatable product. In about three minutes the mix begins to freeze and within a few more minutes, the desired overrun, about 50%, is achieved. About one- to two-thirds of the water freezes during this stage.
7. **Packaging and hardening:** After the desired overrun is reached, the mixture is packaged and placed in freezers where the freezing process continues. The temperature falls quickly, within one or two minutes, to at least 0°F (-17°C) but ideally -15°F (-26°C). For best results, the freezing process should occur rapidly so that the mixture does not form large, coarse ice crystals but small, smooth ones. The frozen yogurt may be stored in continuous or batch freezers. In the former, there is a constant flow of product into the freezer, while in the batch method, batches are prepared individually. Depending on the type of freezer and the size and shape of the package, the final hardening takes between 30 minutes to 12 hours.

8. **Shipping:** The containers of frozen yogurt are piled closely together inside the delivery trucks to minimize the temperature change during shipping. The vehicles are generally mechanically refrigerated at the same temperatures as in the storage facilities in the factory, about -15°F (-26°C), and not above the temperature at the retail outlet. Dry ice may be used as a refrigerant, though it risks heat shock to the yogurt, which occurs if the temperature falls too low; the freezing point for dry ice is -109°F (-78°C). The frozen yogurt is shippedto retail outlets and foodservice establishments or other manufacturers for further processing into novelties.





Processing and Pasteurizing

Homogenizing

Inoculating with yogurt culture

Cooling and aging

Flavoring, coloring, and freezing

Packaging and hardening

Testing

Quality control: All aspects of production, packaging, and distribution of frozen yogurt should be performed with appropriate hygiene to minimize the risk of contaminating the food. An automated CIP (clean-in-place) system quickly, easily, and efficiently cleans all the pumps and tanks for maximum protection against pathogenic bacteria. Manufacturers must adhere to the pasteurization temperatures and minimum times required by the Public Health Service and other regulatory agencies. Tests are regularly conducted for standard plate count of bacteria and coliform and other microorganisms, such as molds and yeast, which could contaminate the product. Also, care must be taken to avoid fermentation, which could damage the product by making it more acid, altering color, and curdling. Finally, frozen yogurt manufacturers must provide accurate information regarding the ingredients and the caloric composition of the product.

3. PROJECT COMPONENTS

3.1 Land & Building

The land required for this manufacturing unit will be approx. around 2000 square feet. Land Purchase and Building Civil Work Cost have not been considered as part of the cost of project. It is expected that the premises will be on rental and approximate rentals assumed of the same will be Rs.20,000 per month.

- Workshop Area- This area includes the setup and foundation space for all equipment's, work floor area, etc. Total workshop area is approx.1000 Sqft.

- Inventory Area- This area includes the storage space for all the raw materials and finished goods. Total inventory area is approx. 500 Sqft.
- Office Area – This space includes staff working region, their accommodation space. Total workshop area is approx. 300 Sqft. This may be considered above the ground floor.
- Parking Space, Electric Mounting Space, and Others. This could be approx. 200 Sqft.

Land and building requirement may vary depending on the size of project.

3.2 Plant & Machinery

- **Mixer:** The mixer is used for required ingredients mixing

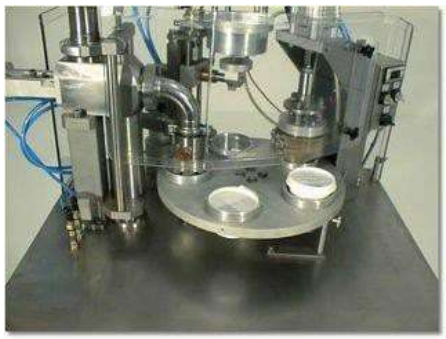
Pasteurizer: The pasteurizer is a central piece of equipment in your yogurt line because it's responsible for making the milk ready for the fermentation phase.

Homogenization Machine: This machine is used for the homogenization process. Homogenization is the process of reducing a substance, such as the fat globules in milk, to extremely small particles and distributing it uniformly throughout a fluid, such as milk. When milk is properly homogenized, the cream will not rise to the top.

Ageing Vat: These Stainless steel tanks, cooled by circulating chilled water (compressor not included), are complete with a slow stirrer and a sloping bottom. They are used to bring to maturity a mixture of ice cream or frozen products at a constant temperature of +4C keeping homogeneous the mass, contents of the tank.

Cooling system or Chillers: This machine or system is used for cooling the product.

Packaging machine: An automatic Packing Machine can be used for packing imli sauce. The sauce can also be packed in bottles by using various machines.



Machine	Quantity	Price
Mixer	1	30,000
Pasteurizer	1	2,00,000
Homogenization machine	1	1,50,000
Aging and flavoring vat	1	1,00,000
Cooling system	1	1,50,000
Packaging machine	1	2,80,000
TOTAL		**9,10,000**

Note: Total Machinery cost shall be Rs 9.10 lakhs (Approx.) including GST and Transportation Cost.

4 LICENSE & APPROVALS

Basic registration required in this project:

- MSME Udyam registration
- GST registration
- NOC for fire safety board and Pollution Control Board
- BIS Certification
- ISO Certification
- Trade License
- Factory License (Optional)
- FSSAI License
- Choice of a Brand Name of the product and secure the name with Trademark if required.

Projected Balance Sheet

PROJECTED BALANCE SHEET					(in Lacs)
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Liabilities					
Capital					
Opening balance		3.30	5.36	7.40	9.64
Add:- Own Capital	1.54				
Add:- Retained Profit	5.05	6.56	7.75	9.84	11.31
Less:- Drawings	3.30	4.50	5.70	7.60	8.60
Closing Balance	**3.30**	**5.36**	**7.40**	**9.64**	**12.35**
Term Loan	8.48	6.36	4.24	2.12	-
Working Capital Limit	4.34	4.34	4.34	4.34	4.34
Sundry Creditors	1.66	1.97	2.29	2.63	3.00
Provisions & Other Liability	0.40	0.48	0.58	0.80	0.96
TOTAL :	**18.19**	**18.51**	**18.85**	**19.54**	**20.65**
Assets					
Fixed Assets (Gross)	10.60	10.60	10.60	10.60	10.60
Gross Dep.	1.59	2.94	4.09	5.07	5.90
Net Fixed Assets	**9.01**	**7.66**	**6.51**	**5.53**	**4.70**
Current Assets					
Sundry Debtors	2.13	2.57	3.01	3.48	3.99
Stock in Hand	4.36	5.13	5.97	6.87	7.83
Cash and Bank	0.18	0.15	0.16	0.15	0.14
Loans & Advances /Other Current Assets	2.50	3.00	3.20	3.50	4.00
TOTAL :	**18.19**	**18.51**	**18.85**	**19.54**	**20.65**

Projected Profitability

PROJECTED PROFITABILITY STATEMENT					(in Lacs)
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Capacity Utilisation %	**40%**	**45%**	**50%**	**55%**	**60%**
SALES					
Gross Sale					
Frozen Yogurt	127.98	154.04	180.54	208.91	239.15
Total	**127.98**	**154.04**	**180.54**	**208.91**	**239.15**
COST OF SALES					
Raw Material Consumed	99.84	117.94	137.28	157.87	179.71
Electricity Expenses	2.30	2.59	2.88	3.17	3.46
Depreciation	1.59	1.35	1.15	0.98	0.83
Wages & labour	8.16	9.38	11.45	13.74	16.49
Repair & maintenance	1.92	2.31	2.71	3.13	3.59
Packaging	1.66	2.00	2.35	2.72	3.11
Cost of Production	115.48	135.58	157.81	181.60	207.18
Add: Opening Stock	-	2.69	3.16	3.68	4.24
Less: Closing Stock	2.69	3.16	3.68	4.24	4.83
Cost of Sales	112.78	135.11	157.29	181.05	206.58
GROSS PROFIT	**15.20**	**18.93**	**23.24**	**27.86**	**32.57**
	11.88%	**12.29%**	**12.88%**	**13.34%**	**13.62%**
Salary to Staff	4.14	5.59	7.82	10.02	11.82
Interest on Term Loan	0.94	0.83	0.59	0.36	0.13
Interest on working Capital	0.48	0.48	0.48	0.48	0.48
Rent	2.40	2.76	3.17	3.65	4.20
Selling & Administrative Exp.	2.18	2.31	2.71	3.13	3.59
TOTAL	**10.13**	**11.96**	**14.78**	**17.64**	**20.21**
NET PROFIT	5.07	6.97	8.47	10.22	12.36
	3.96%	**4.52%**	**4.69%**	**4.89%**	**5.17%**
Taxation	0.01	0.41	0.72	0.38	1.05
PROFIT (After Tax)	5.05	6.56	7.75	9.84	11.31

Projected Cash Flow Statement

PROJECTED CASH FLOW STATEMENT					(in Lacs)
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
SOURCES OF FUND					
Own Margin	1.54				
Net Profit	5.07	6.97	8.47	10.22	12.36
Depreciation & Exp. W/off	1.59	1.35	1.15	0.98	0.83
Increase in Cash Credit	4.34	-	-	-	-
Increase In Term Loan	9.54	-	-	-	-
Increase in Creditors	1.66	0.30	0.32	0.34	0.36
Increase in Provisions & Oth labilities	0.40	0.08	0.10	0.22	0.16
	-				
TOTAL :	**24.15**	**8.70**	**10.03**	**11.77**	**13.71**
APPLICATION OF FUND					
Increase in Fixed Assets	10.60				
Increase in Stock	4.36	0.77	0.84	0.90	0.96
Increase in Debtors	2.13	0.43	0.44	0.47	0.50
Repayment of Term Loan	1.06	2.12	2.12	2.12	2.12
Loans & Advances /Other Current Assets	2.50	0.50	0.20	0.30	0.50
Drawings	3.30	4.50	5.70	7.60	8.60
Taxation	0.01	0.41	0.72	0.38	1.05
TOTAL :	**23.97**	**8.73**	**10.02**	**11.77**	**13.73**
Opening Cash & Bank Balance	-	0.18	0.15	0.16	0.15
Add : Surplus	0.18	(0.03)	0.01	(0.01)	(0.02)
Closing Cash & Bank Balance	**0.18**	**0.15**	**0.16**	**0.15**	**0.14**

Repayment schedule

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Closing Balance**
1st	Opening Balance						
	1st month	-	9.54	9.54	-	-	9.54
	2nd month	9.54	-	9.54	0.09	-	9.54
	3rd month	9.54	-	9.54	0.09	-	9.54
	4th month	9.54	-	9.54	0.09		9.54
	5th month	9.54	-	9.54	0.09		9.54
	6th month	9.54	-	9.54	0.09		9.54
	7th month	9.54	-	9.54	0.09	0.18	9.36
	8th month	9.36	-	9.36	0.09	0.18	9.19
	9th month	9.19	-	9.19	0.08	0.18	9.01
	10th month	9.01	-	9.01	0.08	0.18	8.83
	11th month	8.83	-	8.83	0.08	0.18	8.66
	12th month	8.66	-	8.66	0.08	0.18	8.48
					0.94	**1.06**	
2nd	Opening Balance						
	1st month	8.48	-	8.48	0.08	0.18	8.30
	2nd month	8.30	-	8.30	0.08	0.18	8.13
	3rd month	8.13	-	8.13	0.07	0.18	7.95
	4th month	7.95	-	7.95	0.07	0.18	7.77
	5th month	7.77	-	7.77	0.07	0.18	7.60
	6th month	7.60	-	7.60	0.07	0.18	7.42

	7th month	7.42	-	7.42	0.07	0.18	7.24
	8th month	7.24	-	7.24	0.07	0.18	7.07
	9th month	7.07	-	7.07	0.06	0.18	6.89
	10th month	6.89	-	6.89	0.06	0.18	6.71
	11th month	6.71	-	6.71	0.06	0.18	6.54
	12th month	6.54	-	6.54	0.06	0.18	6.36
					0.83	**2.12**	
3rd	Opening Balance						
	1st month	6.36	-	6.36	0.06	0.18	6.18
	2nd month	6.18	-	6.18	0.06	0.18	6.01
	3rd month	6.01	-	6.01	0.06	0.18	5.83
	4th month	5.83	-	5.83	0.05	0.18	5.65
	5th month	5.65	-	5.65	0.05	0.18	5.48
	6th month	5.48	-	5.48	0.05	0.18	5.30
	7th month	5.30	-	5.30	0.05	0.18	5.12
	8th month	5.12	-	5.12	0.05	0.18	4.95
	9th month	4.95	-	4.95	0.05	0.18	4.77
	10th month	4.77	-	4.77	0.04	0.18	4.59
	11th month	4.59	-	4.59	0.04	0.18	4.42
	12th month	4.42	-	4.42	0.04	0.18	4.24
					0.59	**2.12**	
4th	Opening Balance						
	1st month	4.24	-	4.24	0.04	0.18	4.06
	2nd month	4.06	-	4.06	0.04	0.18	3.89
	3rd month	3.89	-	3.89	0.04	0.18	3.71

	4th month	3.71	-	3.71	0.03	0.18	3.53
	5th month	3.53	-	3.53	0.03	0.18	3.36
	6th month	3.36	-	3.36	0.03	0.18	3.18
	7th month	3.18	-	3.18	0.03	0.18	3.00
	8th month	3.00	-	3.00	0.03	0.18	2.83
	9th month	2.83	-	2.83	0.03	0.18	2.65
	10th month	2.65	-	2.65	0.02	0.18	2.47
	11th month	2.47	-	2.47	0.02	0.18	2.30
	12th month	2.30	-	2.30	0.02	0.18	2.12
					0.36	**2.12**	
5th	Opening Balance						
	1st month	2.12	-	2.12	0.02	0.18	1.94
	2nd month	1.94	-	1.94	0.02	0.18	1.77
	3rd month	1.77	-	1.77	0.02	0.18	1.59
	4th month	1.59	-	1.59	0.01	0.18	1.41
	5th month	1.41	-	1.41	0.01	0.18	1.24
	6th month	1.24	-	1.24	0.01	0.18	1.06
	7th month	1.06	-	1.06	0.01	0.18	0.88
	8th month	0.88	-	0.88	0.01	0.18	0.71
	9th month	0.71	-	0.71	0.01	0.18	0.53
	10th month	0.53	-	0.53	0.00	0.18	0.35
	11th month	0.35	-	0.35	0.00	0.18	0.18
	12th month	0.18	-	0.18	0.00	0.18	-
					0.13	**2.12**	
DOOR TO DOOR		60	MONTHS				
MORATORIUM PERIOD		6	MONTHS				
REPAYMENT PERIOD		54	MONTHS				

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