



Daffodil
International
University

Internship Report

On

**Igloo Ice-cream and MILK Unit
Abdul Monem Ltd.**

Submitted To:

Professor. Dr. Bellal Hossain
Head of Department
Department of Nutrition and Food Engineering
Daffodil International University

Submitted By:

Nawshin Tasnim
ID : 152-34-412

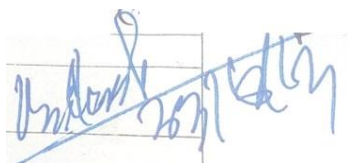
Department of Nutrition and Food Engineering
Daffodil International University

Date of Submission: 25th June, 2019

Certification of Approval

I am pleased to certify that the internship report on “Igloo Ice cream and Milk Unit” at Abdul Monem Ltd. Conducted by Nawshin Tasnim bearing ID: 152-34-412 of Department of Nutrition and Food Engineering has been approved for Defense/ Viva-voce. Under my supervision Nawshin Tasnim worked in Igloo Ice cream and Milk Unit at Abdul Monem Ltd. I am pleased to hereby certify that the data and test presented in the freport are authentic work of Nawshin Tasnim. I strongly recommended the report present by Nawshin Tasnim for further academic recommended and defense/viva-voce. Nawshin Tasnim bears a strong moral character and a very pleasant personality. I wish her all success in life.

Signature:



Dr. Md. Bellal Hossain

Professor and Head

Department of Nutrition of Food Engineering

Faculty of Allied Health Sciences

Daffodil International University

ACKNOWLEDGEMENT

I would like to express my utmost gratitude to all the people, who have supported me to make this report. First of all, I am thankful to Almighty Allah for making me successfully complete my internship. I would like to express my heartiest respect and gratitude to Professor Dr. Bellal Hossain, Head of the Dept. of Nutrition and Food Engineering, Daffodil International University, Dhaka for creating the scope of practical knowledge and providing me valuable guidelines to complete my work. Without his kind supervision, this report would not be completed.

I am grateful and thankful to Mr. Ikramul Hossain, General Manager (Factory Operation) for allowing to complete the internship in Igloo Ice cream and Milk Unit.

I would like to express my appreciation to A.K.M. Ali Reza, Sr. Manager QA, Md. Tamimur Islam Chowdhury Asst. Manager (Production), Md. Hafizur Rahman Deputy Manager (QA), Md. Muhaddis Islam Sr. Executive (QA).

I am blessed to have Mr. Mahmoodul Haque Khan, Asst. Manager (QA), Igloo as my organization supervisor who guides us from day one till last day of my internship. I am grateful to him of his valuable time, sharing knowledge and teaching us various practical aspects of industrial life and organizational behavior.

I am also thankful to Executive, Jr. Executives and Lab Assistants.

DEDICATION

When a person doing something there must be an inspiration behind doing the task. At first dedicating this report to almighty Allah without his mercy and sympathy I was not able to accomplish this work. I also dedicate this report to my lovely parents with deepest gratitude whose love and prayers have been a source of strength for me. And then one important person to whom I dedicate this report cause without her guideline and nurturing it could be quit impossible to make this report that is my supervisor Dr. Md. Bellal Hossain.

Table of Content:

Sl No.	Title	Page No.
01	Introduction	1-3
02	Ice Cream Production Unit	3-6
03	Quality Control and Assurance Department	6-10
04	Milk Production Unit	10-13
05	Engineering Section	13-14
06	Plastic Unit	15
07	Store Unit	16-17
08	Distribution Unit	18
09	Human Resource and Administration	19
10	Conclusion	19

Introduction

Igloo ice cream and milk unit is an organization under Abdul Monem Ltd. Abdul Monem Ltd (AML) is one among the leading business conglomerates of Bangladesh. This organization had established at 1956 by the honorable Managing Director and Chairman Mr. Abdul Monem and he still successfully runs the business together with his two eligible sons operating as the Deputy Managing directors (DMD) of the company, Mr. A.S.M. Mainuddin Monem and Mr. A.S.M. Mohiuddin Monem. Abdul Monem Ltd (AML) started their business with AML Construction which is first and presently the largest business concern of AML group of Companies. Now a day they produce number one ice-cream brand Igloo, Igloo milk and dairy products, Igloo food items and snacks, manufacturer of pharmaceuticals, authorized bottler of Coca-Cola, Sprite and Fanta. Established AM Sugar Refinery Ltd., AM Rice Bran Oil, maker of auto bricks, bitumen and other construction materials, AM Securities and Financial Services Ltd. Etc.

Igloo ice cream had established in 1964. Igloo has maintained a robust position with in market of the Bangladeshi customers. Its no.1 ice cream brand in our country. Igloo, believes in guaranteeing long existence by being profitable, prospering and sustainable. They are very keen to know customers advice, complain, demand and, try to amend likewise as add new dimension to their business so as to make sure survival during this extremely competitive trade.

Igloo ice cream occupies largest market share of 63% among all the ice cream brand of Bangladesh where its major competitor Polar occupies 24% share

Igloo started their production first in Chittagong. Then, with the growth of the market a new factory was established in Shampur Industrial area in Dhaka with modern machineries and technologies to fulfill the market demand.

Igloo is the symbol of quality ice cream throughout the country. They produce more than 100 varieties of flavor, color and shapes ice cream. Ice cream categorized into different ranges as: stick, cup cone, family pack, double sundae, premium ice cream, ice cream cake etc.

Company Profile

Corporate Head Office	Monem Business District 111, Bir Uttam C.R. Dutta Road, Level 13 Karwanbazar, Dhaka-1205, Bangladesh.
Factory	71/A-71/B, Kadamtali I/A, Shyampur, Dhaka-1204,
Year of establishment	1964
Parent company	Abdul Monem Ltd (AML)
Managing Director and Chairman	Mr. Abdul Monem
Deputy Managing Directors (DMD)	Mr. A.S.M. Mainuddin Monem Mr. A.S.M. Mohiuddin Monem.



Igloo Ice Cream & Milk Unit consists of the subsequent units:

- Quality Control and Assurance Department
- Ice Cream Production Unit
- Milk Production Unit
- Plastic Unit
- Engineering Unit

- Store Unit
- Distribution Unit
- Human Resource (HR) and Administration

Ice Cream Production Unit

Ice cream is a sugary frozen food usually eaten as a snack or dessert. It is usually made from dairy product such as milk and cream, and often combined with fruits or other ingredients and flavors. It is typically sweetened with sugar or sugar substitutes.

Objectives

- Demand wise production planning.
- Daily production planning
- Man power distribution.
- Inventory line planning.

Ice Cream Machineries:

Rollo-27 (Old):

SKU: Chocbar, DudhMalai, Shell & Core Lolly (Orange & Lemon)

Rated Capacity: 18000 pcs/hr

Rollo-27 (New):

SKU: Chocbar, Ego, Shell & Core, Caramel Crunchbar.

Rated Capacity: 18000 pcs/hr

Big drum/Choice filler:

SKU: Vanilla cup, Cornelli classic

Rated Capacity: 31200 pcs vanilla/hr, 28800 pcs cornelli/hr

SL-600:

SKU: Mega, Macho, Mini Choc Exotic (Almond Split, Swiss Chocolate) Ripple Cake

Rate Capacity: 600 Ltr/hr

TI-6000:

SKU:Cup (Vanilla, Mango, Strawberry, Chocolate & Orange) Single Sundae
(Chocolate cheers, Caramel combo)

Rated Capacity:6000 pcs/hr)

Comet C-2

SKU:Cone (Cornelli - Classic, Premium, Belgian & Chocolate) Cup (Vanilla, Mango, Strawberry, Chocolate & Orange)

Rate Capacity:14400 pcs/hr)

FM-3000:

SKU:Cup (Mango, Vanilla, Snowball &PistaKulfi)

Rate Capacity:3000 pcs/hr

FM-6000:

SKU: Cup (Vanilla, Mango, Strawberry, Chocolate & Orange)

Rated Capacity: 6000 pcs/hr

Semi Auto Filler

SKU: Double sundae

Ingredients:

- Skim milk powder
- Sugar
- Cream (EMDI)
- Luxice(stabilizer & emulsifier)
- Butter oil
- Coconut oil
- Liquid glucose

Standard Ingredients Requirement for Ice Cream:

Milk Solid	20%
Fat	10%
Acidity	0.22%
Sugar	16%
Stabilizer and Emulsifier	0.2-0.4%
Total Solid	36%



Ice Cream Processing

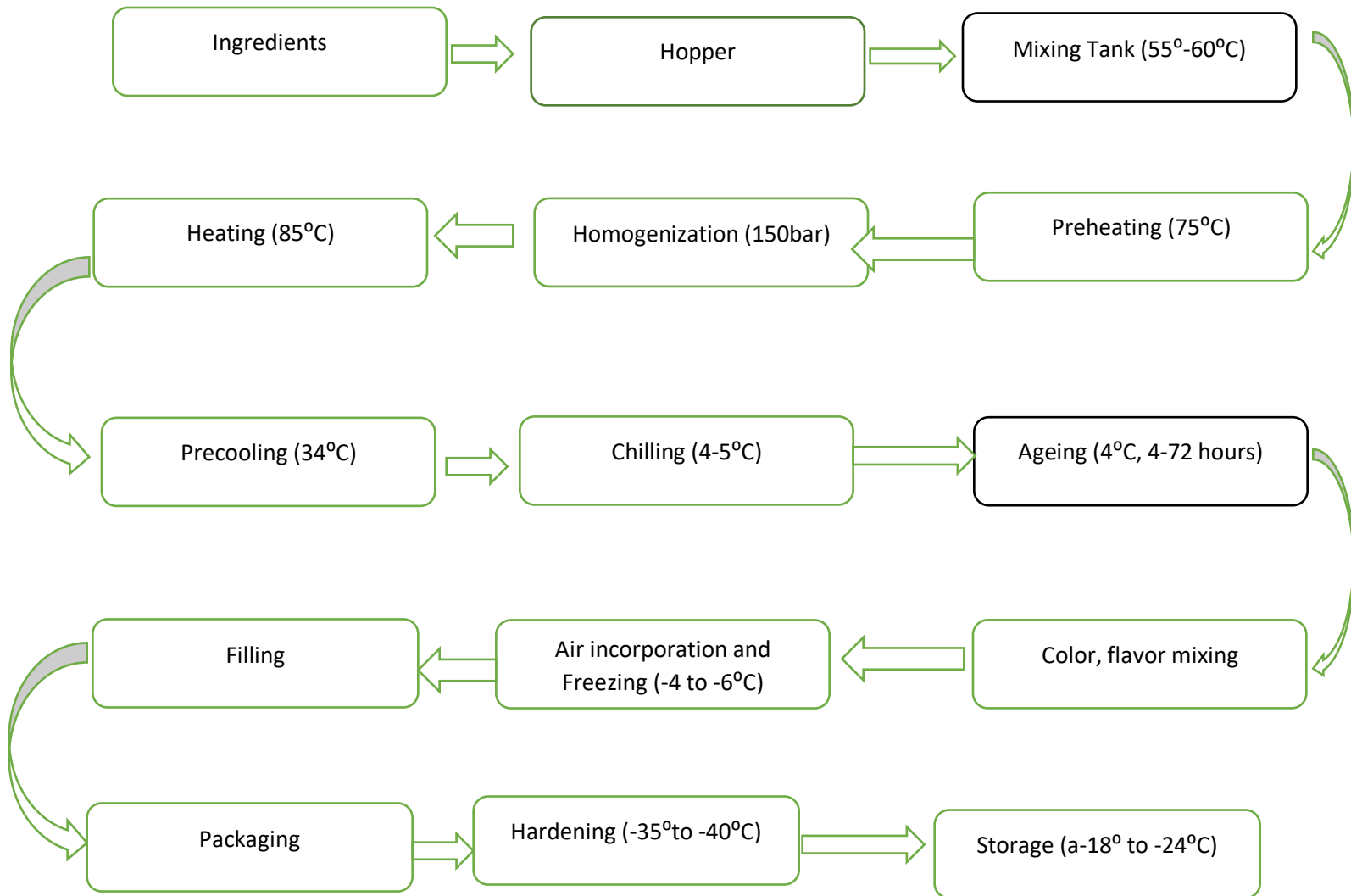


Fig: Ice Cream Processing Flow Diagram

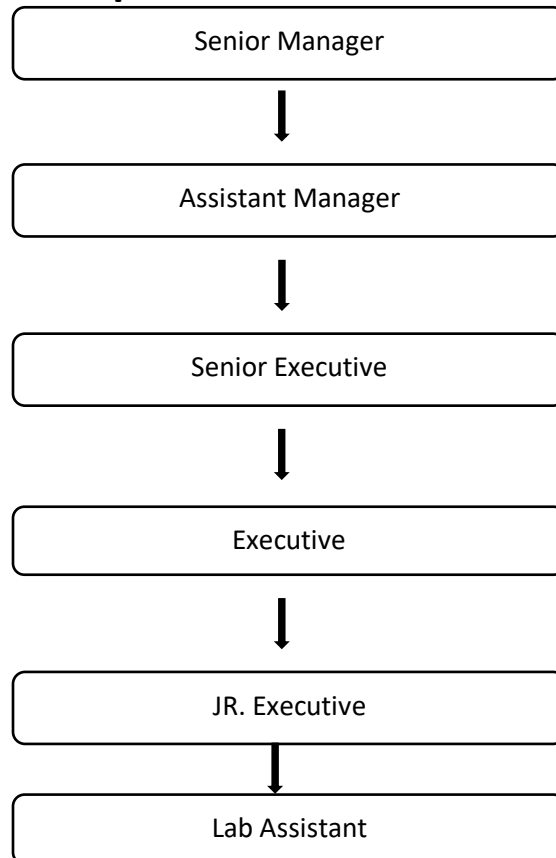
Quality Control and Assurance Department

Igloo Ice Cream & Milk Unit has a well-established QA & QC department to maintain the quality for each product by maintain Total Quality Management (TQM).

Objective

- Incoming raw material certification
- Packaging material certification
- On line process control
- Ensure Good Manufacturing Practices (GMP)
- Maintain Effluent Treatment Plant (ETP)

Organogram of QA department



QC team conducts different tests are classified into:

Physical Test

- Packaging Material Test (Water soaking, Gram per Square Meter, GSM; Dimension, Lock System & Print)
- ii. Total Solids Test
- iii. Specific Gravity Test

- iv. Viscosity Test

Chemical Test

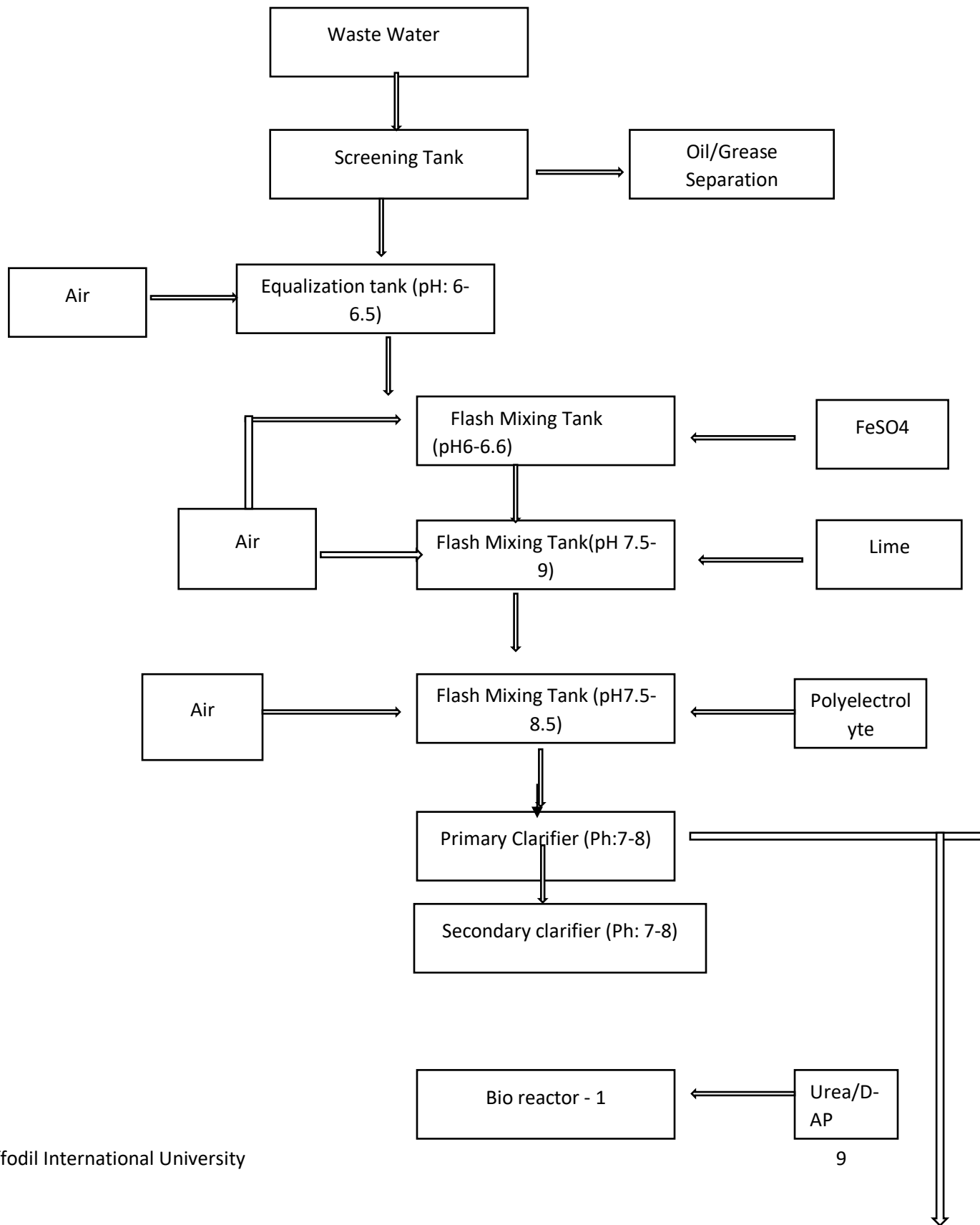
- Fat Test
- Acidity Test
- Gluten Test
- Milk Adulteration Test
 - Fat Test
 - CLR Test
 - Acidity Test
 - COB (Clot on Boiling) Test
 - Formalin Test
 - Alcohol Test
 - H₂O₂ Test
 - Soda Test
 - Starch detection Test
 - Glucose detection Test
 - Urea detection Test

Microbiological Test

- Standard/Total Plate Count
- Coliform Count
- Yeast-Mould Count
- Salmonella – Shigella Test

Effluent Treatment Plant or **ETP** is a kind of waste water treatment method to purify industrial waste water for its reuse or safe disposal to the environment.

Process Flowchart of ETP Plant



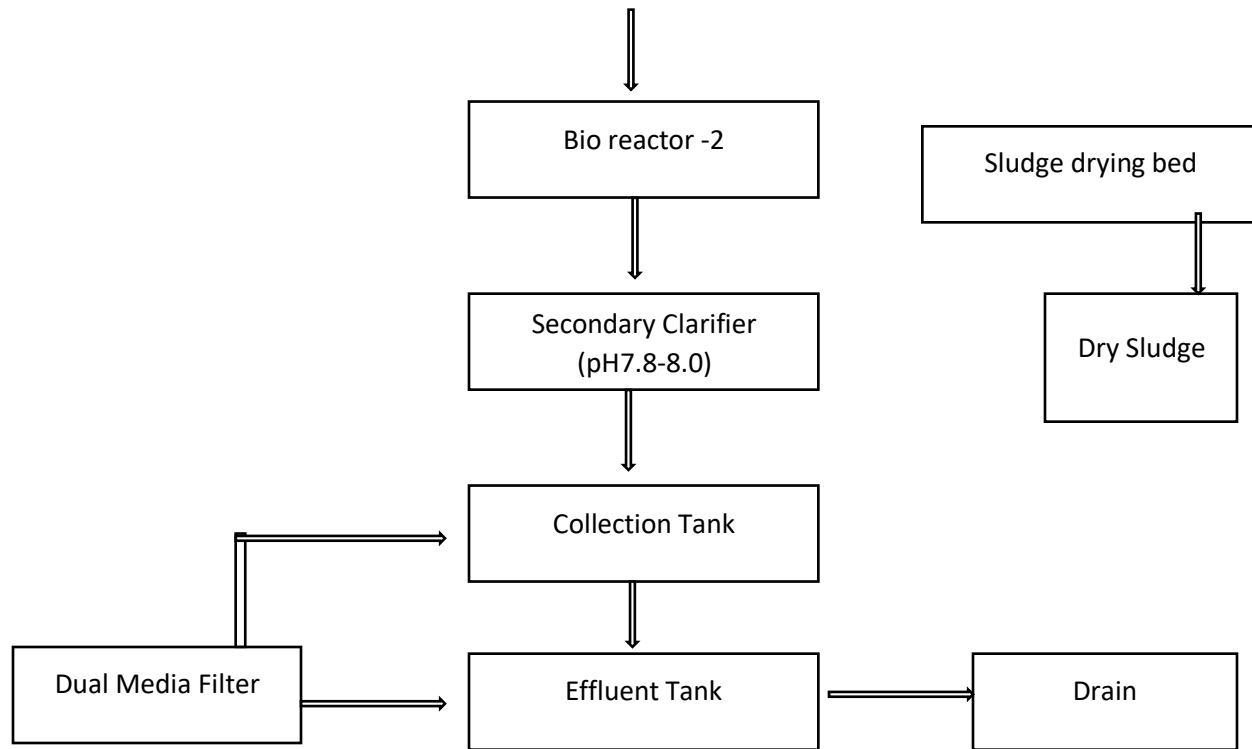


Figure: Process Flowchart of ETP Plant

Milk Production Unit

Objectives

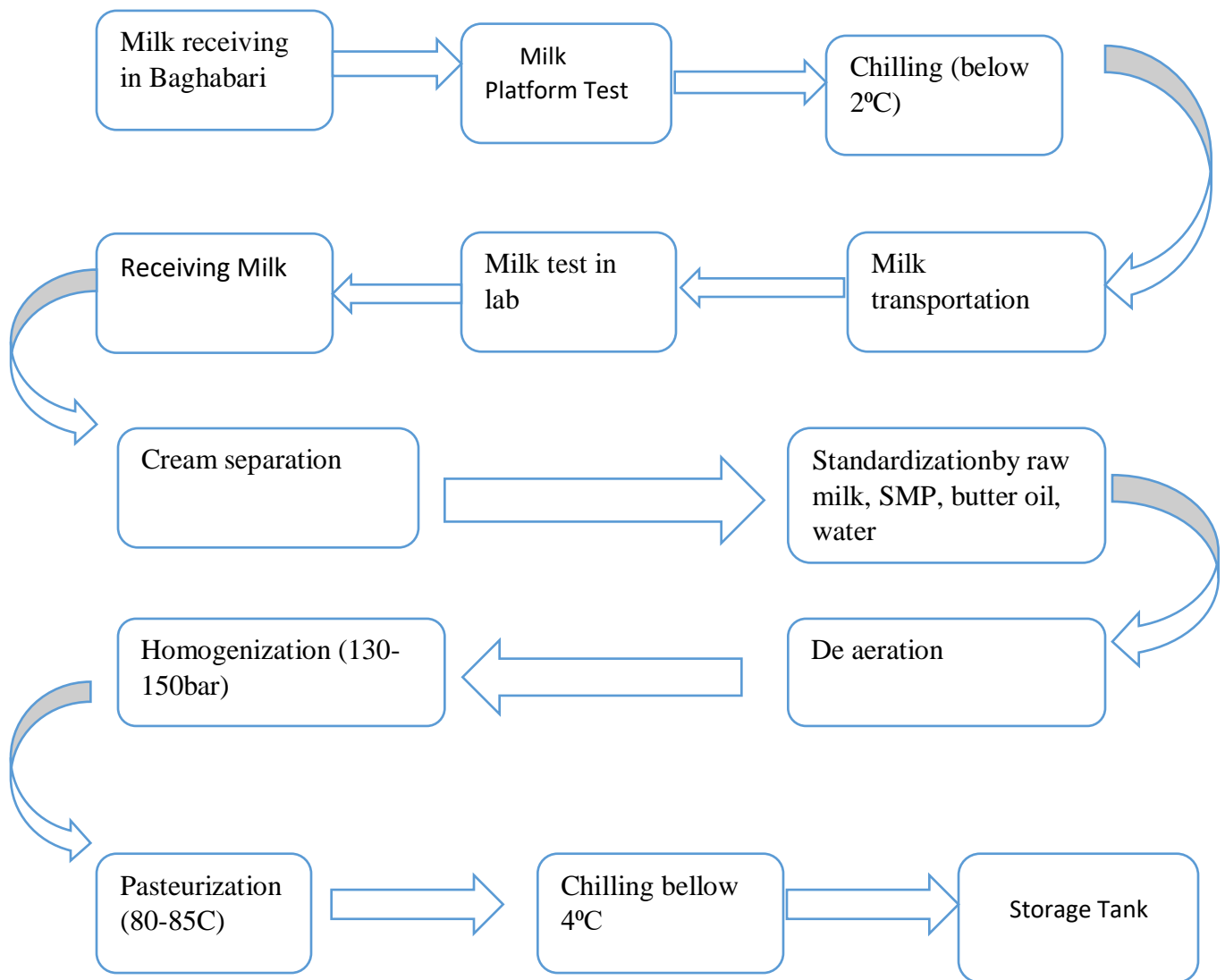
- To support ice cream production unit by providing pasteurized milk.
- To produce pasteurized milk, flavored milk, yoghurt and ghee according to market demand.

Products of Milk Production Unit

- Fresh milk
- Flavored milk
 - Mango milk
 - Chocolate milk
- Ghee



Process Flowchart for Milk Production



Process Flowchart for sweet curd production

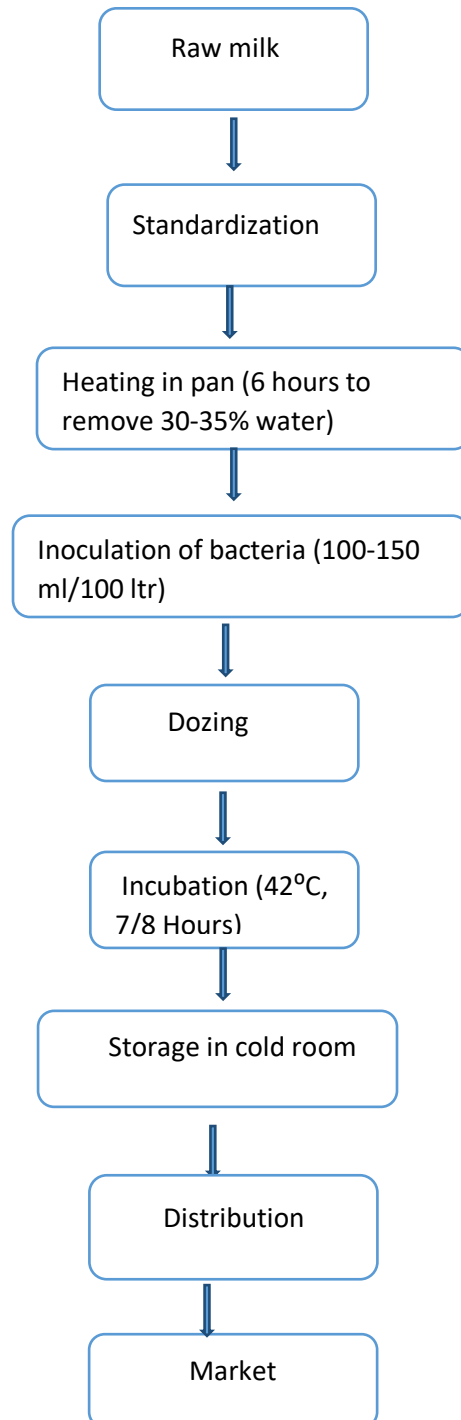
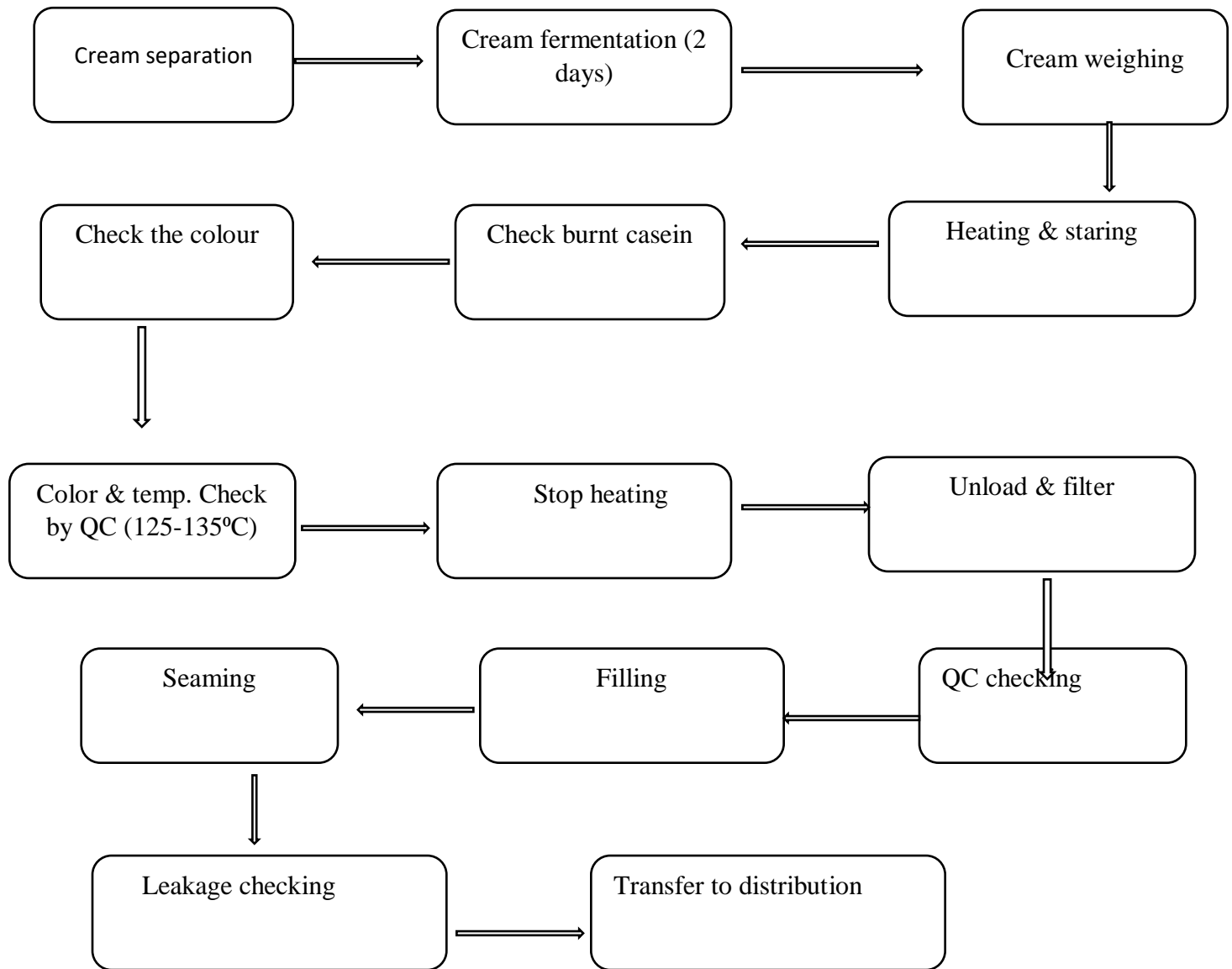


Figure: Sweet Curd Processing

Process flow chart for ghee production



Engineering Section

Objectives

- To maintain Refrigerants.
- To maintain Boiler, Cooling Tower and Ammonia Plant.
- Utilization of Generator, Power, Gas, Steam and Water.

- To maintain transport vehicles.

Engineering section consist of five section:

- Refrigeration
- Mechanical
 - Electrical
 - Civil
 - Automobile

Machineries of Utility unit

1. Gas Generator

Model: FGLD 480

RPM: 1500

Fuel: Natural Gas

2. Diesel Generator

Model: MW160

Capacity: 128KW

3. Fire Tube Boiler

Capacity: 2.8 ton/hr

Type: Horizontal

Pressure: 75psi

4. Air Compressor

Model: E30-10

Capacity: 4.531m³/min

Rated Pressure: 9.51Kg/cm²

Type: screw

Plastic Unit

Objectives

- To produce plastic container in their own premises to support ice cream production unit.

Raw Material

Polypropylene (PP)

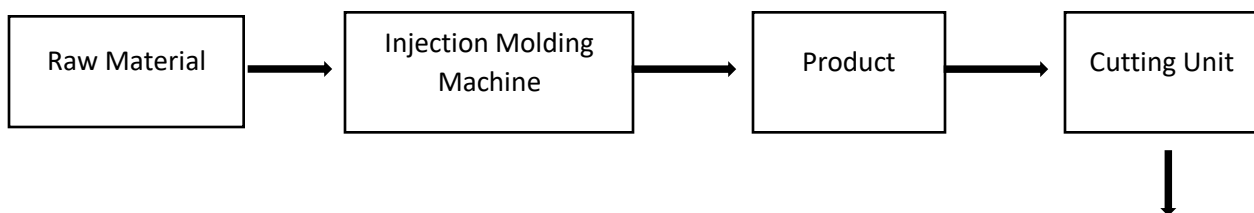
- Transparent Polypropylene (PP)
 - EC-340R
 - J-580
- Non-Transparent Polypropylene (PP)
 - JH-370A
 - JH-370B
 - ExxonMobil
- High Impact Polystyrene (HIPS)
 - 3341 (Printing Cup)
 - 3351 (Big Spoon)
- Masterbatch
 - Black
 - Silver
 - Golden
 - White

Two types of machineries used in plastic production unit:

- Injection Molding Machine
- Printing Machine

Plastic Unit

Plastic Unit Production and Supply Management:



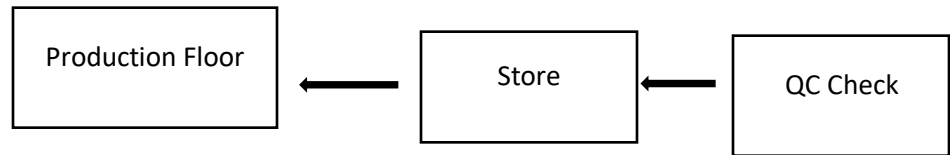


Fig: Flow diagram of production and supply management of

Store Unit

Objectives

- To store about 1000 types of raw materials.
- To keep machine spare parts.

General Raw Material

- Butter oil
- Sugar
- Skim milk powder
- Vegetable fat
- Luxice 4753
- Hazelnut Coating 5071138
- Spray Chocolate Coating 502270
- Chocolate Chips
- Toffee Coating 510463
- Light Chocolate
- Rice ball
- Red Cherry Fruit E120

Flavors

- Caramel flavor
- Toffee flavor
- Cream flavor
- Lemon flavor
- Vanillaflavor
- Mango flavor

Store unit management process

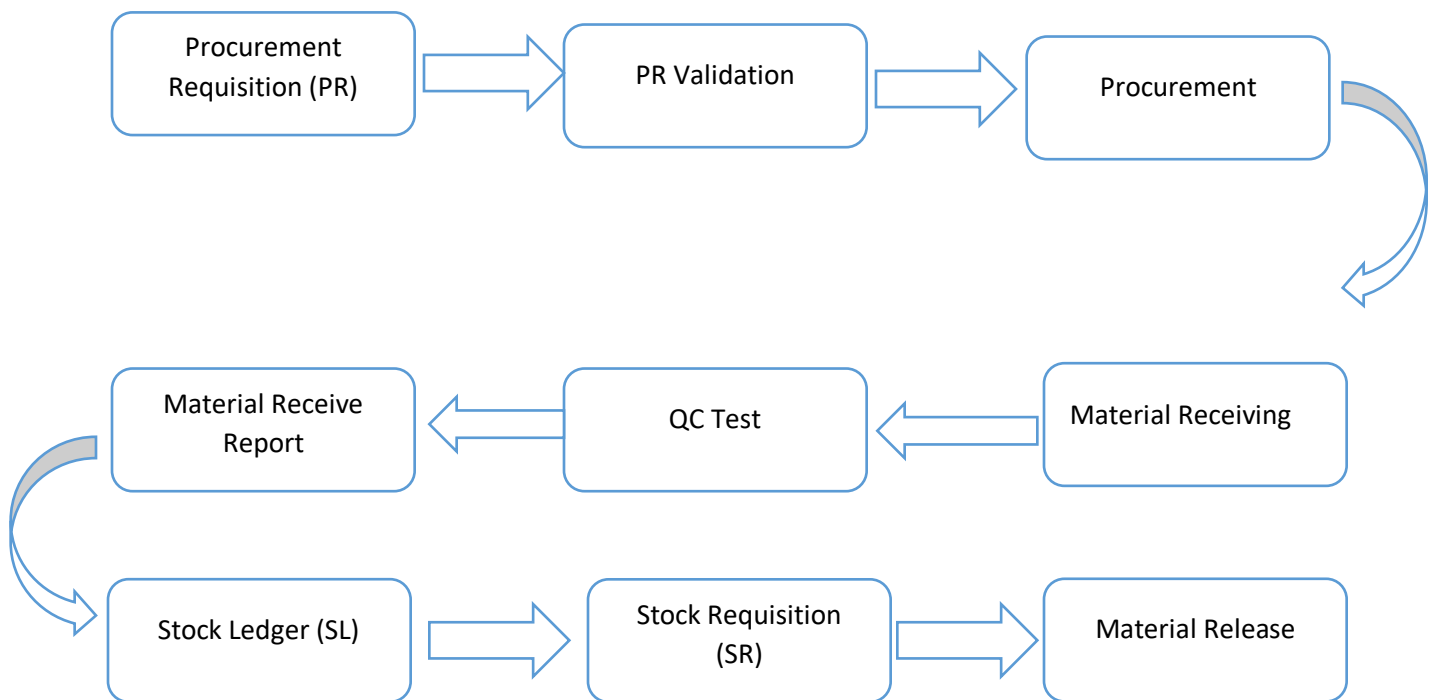


Fig: store unit management process flowchart

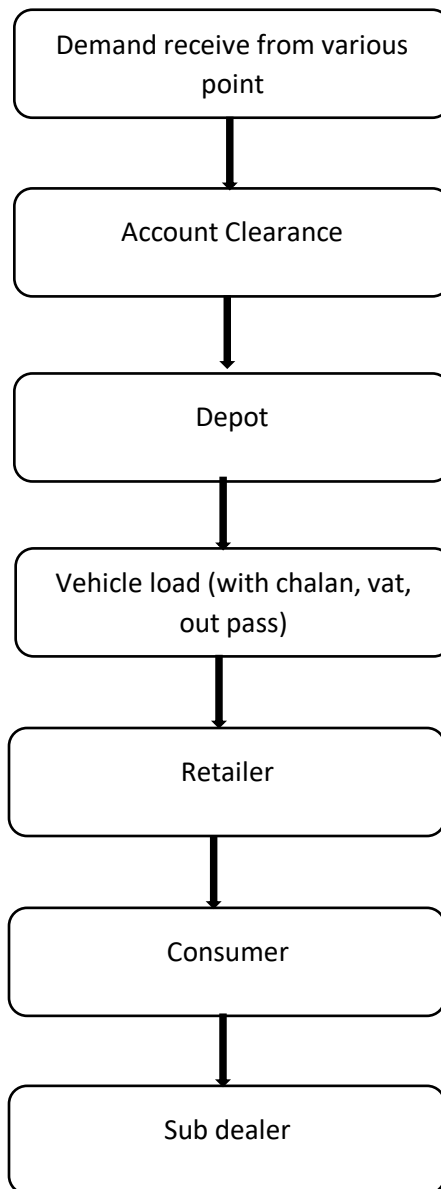
Distribution Unit

Objectives

- To distribute ice cream, milk and milk products by maintain cold chain.
- To maintain vehicle temperature about -4°C to -5°C.

Abdul Monem Limited has total 40 distribution channel in Bangladesh. 20 inside Dhaka and other 20 outside Dhaka. There are 3 cold storages under distribution Unit. 24 vehicles are used in distribution (14 small size, capacity 3000 liter and 10 large size capacity 5000 liter)

Distribution Management



Human Resource and Administration:

Human Resource Management (HRM) is the function among an organization that focuses on recruitment of employee, their performance management, companies development, benefits, safety, communication with employee, motivation and training management. 3 types of worker work there: casual, monthly and permanent. Abdul Monem Limited follow labor law and ensure better working environment.

Objectives

- Recruitment
- Training and development
- Motivation and Counseling
- Supply of bonus
- Annual increment
- Provident funds
- Permit occasional holy
- Insurance

Conclusion

We have completed 60 days internee program in igloo ice cream and milk unit. We visited every unit of ice cream and milk plant. This training gives us the opportunity to apply knowledge in real activity, exposing those practical knowledge to the students which are not taught in the university. The training provided access to product equipment's not available in the university as well as assessing students. Interest in the occupation. We are now able to plan and undertake decisions, the program should therefore be maintained and the period extended.