INTERNSHIP REPORT
ON

‘Quality Control Assurance and production of Bakery and juice products in Alin Food Products Ltd.’

Supervised by
Effat Ara Jahan
Lecturer (Senior Scale)
Department of Nutrition and Food Engineering Daffodil International University

Submitted by
Mithun Paul
ID:181-34-752
Department of Nutrition and Food Engineering
Daffodil International University

Date of Submission: 20th Feb 2020

LETTER OF TRANSMITAL

Date: 20/02/2022

Assistant Professor Ms. Fouzia Akter

Head, Department of Nutrition
and Food Engineering Daffodil
International University

Subject: Submission of Internship Report

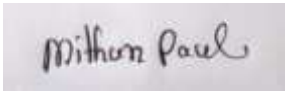
Dear Sir,

It's a great honor for me to have the opportunity to submit the internship report on "Quality Control Assurance and Production of Bakery and juice Products" in "Alin Food Products Ltd" as a part of B.Sc. in Nutrition and Food Engineering (NFE) program curriculum.

This report is prepared by the acquired knowledge during my internship period in "Alin Food Products Ltd.". It's a great achievement and experience for me to work under your active supervision. This report based on "Quality Control Assurance and Production of Bakery and juice Products" in "Alin Food Products Ltd" for thirty days from 2nd October 2021 and end on 1st November, under the supervision of **Mr. Nozibul Hoque Mamun**, (Senior Production Manager) and Head of quality control **Md. Masud Rana** sir" "Alin Food Products Ltd.".

This internship gave me both academic and practical exposure. In this time, I have gained knowledge about the organizational culture and behavior of a prominent consumer product producing organization of the country.

Sincerely Yours



Mithun Paul
ID: 181-34-752
Department of Nutrition and Food Engineering
Daffodil International University.

CERTIFICATE OF APPROVAL

I am pleased to certify that the Internship report on Quality Control Assurance and Production of "Bakery and juice Products" in "Alin Food Products Ltd." conducted by **Mithun Paul**, bearing respectively **ID NO: 181-34-752**, Department of Nutrition and Food Engineering has been approved for presentation, defense and viva-voce.

I am satisfied to certify that the data and the findings in this report are authentic work of **Mithun Paul.** I strongly recommended the report presented by **Mithun Paul** for further academic recommendations and defense and viva-voce. **Mithun Paul** bears a strong moral character and well personality. It has a great pleasure working with him and wish him a successful life.

…….

Ms. Fouzia Akter
Assistant Professor and Head,
Department of Nutrition and Food Engineering
Daffodil International University

…….

Ms. Effat Ara Jahan
Lecturer (Senior Scale)
Department of Nutrition and Food Engineering
Daffodil International University

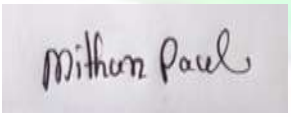
ACKNOWLEDGEMENT

First of all, I would like to express my heartiest gratitude to almighty GOD for his mercy extended to completing my internship report on "Quality Control Assurance and Production of **"Bakery and juice Products"** in **"Alin Food Products Ltd"**. Practical experiences are also needed in parallel with the academic knowledge to fill the gap of theoretical knowledge.

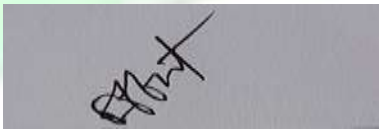
My Deep gratitude and sincere thanks to the honorable Dean, Faculty of Allied Health Science, **Professor Dr. Ahmed Ismail Mustafa** for this kind cooperation and to accept this Degree. I am encouraged to take this privilege to deliver my gratitude to each people who are involved with me in every phase of my lives. I am very grateful to**, Assistant Professor Ms. Fouzia Akter** Head, Department of Nutrition and Food Engineering, Daffodil International University.

I am deeply indebted to my Supervisor **Effat Ara Jahan** Lecturer (Senior Scale), Department of Nutrition and Food Engineering, Daffodil International University, for her whole-hearted supervision during my organizational attachment period. I would like to express my warmest thanks to **NFE Faculty members** for their countless inspiration and encouragement during the student life.

I am expressing my deep gratitude to **Mr. Ranjan Kumar Kar (**DGM Operation Factory at **Alin Food Products Ltd, Dhaka, Bangladesh.) Mr. Masud Rana** Quality Control Manager **Alin Food Products Ltd**. **Mr. Nozibul Hoque Mamun** Senior Production Manager, **"Alin Food Products Ltd.",** and others Assistant quality control officer of "**Alin Food Products Ltd."** to give me an opportunity.



Mithun Paul
ID: 181-34-752
Department of Nutrition and Food Engineering
Daffodil International University



Ms. Effat Ara Jahan
Senior lecturer
Department of Nutrition and Food Engineering
Faculty of Allied Health Sciences
Daffodil International University

- **EXECUTIVE SUMMARY**

“Taste is different” it is the slogan of **“Alin Food Products Ltd.”** Their mission is to provide pure, safe, essential, healthy food products for ensuring a perfect healthy life of customer.

ALIN Foods has grown up in stature and became the largest fruit, vegetable, food stuff processor and exporter in Bangladesh. As an 100% export-oriented company Alin Food Products Ltd, manufacturing and exporting food stuff in different countries across the world. The brand "ALIN" has established itself in every category of food and can boost a product range from Drinks, Confectionery, Snacks, and Spices, rice, mustard oil group and Bakery products. More specifically, we are involved with both manufacturing and exporting of dry food stuffs in different countries across the world.

Table of content

“Alin Food Products Ltd.”

Chapter -Two

Alin Food Products Ltd.

"Taste is Different"

Alin Food Products Limited is a Foods stuff-based company. They have a production plan in the Kingdom of Saudi Arabia and Bangladesh. "ALIN" is currently the most well-known family name among the millions of people in Bangladesh and abroad. Since its origin in 2000, ALIN Foods has grown up in stature and became the largest fruit and vegetable processor and exporter in Bangladesh. ALIN is the pioneer in Bangladesh to be involved procures raw material directly from the farmers and processes through the state of machinery at their factory into hygienically packed food and drinks products. The brand "ALIN" has established itself in every category of food and can boost a product range from Drinks, Confectionery, Snacks, Spices, Rice, Oil and Bakery products.

2.1 Company Profile:

Mr. Omar Farooque Chairman & managing director of Alin Group and He successful in Organizing Different Businesses globally. Alin group which is incorporating with food Production & Export Business with Circular modern technology & machines. They are also members of the Saudi chamber and commerce and they are direct foreign inventors in the kingdom of Saudi Arabia. Their product quality is high as a result company gained acceptance from the consumer. The company developed day by day. The company was the introducer of ethnic dry food in Middle East market, especially in Saudi Arabia. This Company exports their product to Dubai (UAE), KSA, Qatar, Oman, Jordan, Bahrain and Malaysia. This company have a good network in this country. And also have good production techniques and maintain Hygiene. And following the HACCP and GMP rules during production DGM Ranjan Kumar Kar senior production manager Md. Nazibul Haque QC sir Md. Masud Rana.

2.2 Alin Food Product Ltd Mission

Alin is committed to provide pure, safe, essential, healthy food products for ensuring a perfect healthy life of customer. It is dedicated to nature a produce competent world class product with strong sense of ethical values ready to face the competitive &local and foreign markets.

2.3 Alin Food Product Ltd Vision

The Preferred Provider of Essential and Value-Added Foods for Everyone, Everywhere & Every day. Our Services and Quality of Food Will remain perfect For Each and Every Time.

2.4 Alin Food Product Ltd slogan

'Taste Is Different'

2.5 Products List of Alin Food Ltd:

SECTION: BAKERIES

Product name	Quantity
Alin Rusk (Foil packet)	300 gm
Rusk (Foil packet)	150 gm
Rusk Sugar (Foil packet)	150 gm
Gee Rusk	300 gm
cookies biscuit	150 gm
Salted biscuit	150 gm
Bela Biscuit	150 gm
Rusk	300 gm
Dry cake (Paper Pack)	300 gm
Dry cake (Paper Pack)	300 gm
Cookies Biscuit (vanilla flavor)	150 gm
Cookies Biscuit (peanut flavor)	150 gm
Cookies Biscuit	150 gm
cupcake (milk Flavor)	14 gm
cupcake (chocolate Flavor)	14 gm
cupcake (Fruit Flavor)	14gm
cupcake (milk Flavor)	24gm
cupcake (chocolate Flavor)	24 gm

SECTION: Drinks

Products	Quantity
Mango Drinks	250/500/1000 ml
Lychee Drinks	250/500/1000 ml
Orange Drinks	250/500/1000 ml

CHAPTER: THREE

MANUFACTURING PROCESS AND FLOW DIAGRAM

SECTION: BAKERY PRODUCT

❖ **3.1 PRODUCT NAME: CUP CAKE (MILK FLAVOUR)**

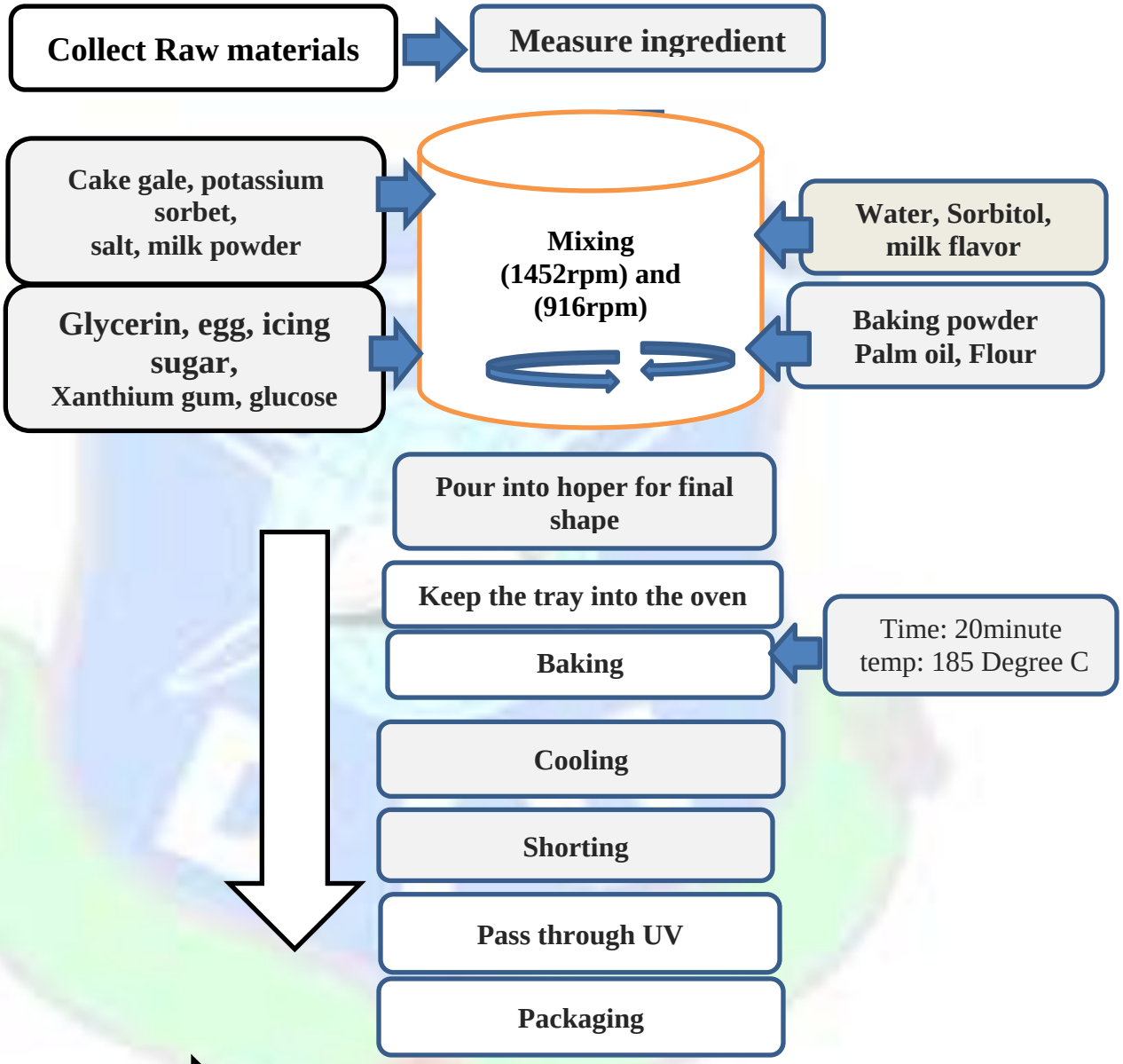
3.1.1 Ingredients:

- Flour
- Water
- Salt
- Milk powder
- Glycerin
- Egg
- Icing sugar
- Xanthium Gum
- Cake gel
- Potassium sorbet
- Sorbitol
- Milk flavor
- Baking powder
- Palm oil

3.1.2 Equipment:

- Measuring balance
- Precision Mixing Machine
- Tray
- Baking Trolley
- Rotary rack oven
- UV Tunnel
- Final shaping machine
- Automatic Dough Roller
- Horizontal Packaging machine

❖ 3.1.3 Flow Diagram of cupcake (Milk Flavour):



NOTE:

- Mid Sealing Temperature 130°c and 153°c for end sealing
- Before baking cake weight :18gm
- After baking weight: 14gm
- Packaging Foil length 120mm
- Three-layer foil used
- Net weight 14gm
- Use before 6 months

3.2 PRODUCT NAME: ALIN CHOCOLATE CAKE

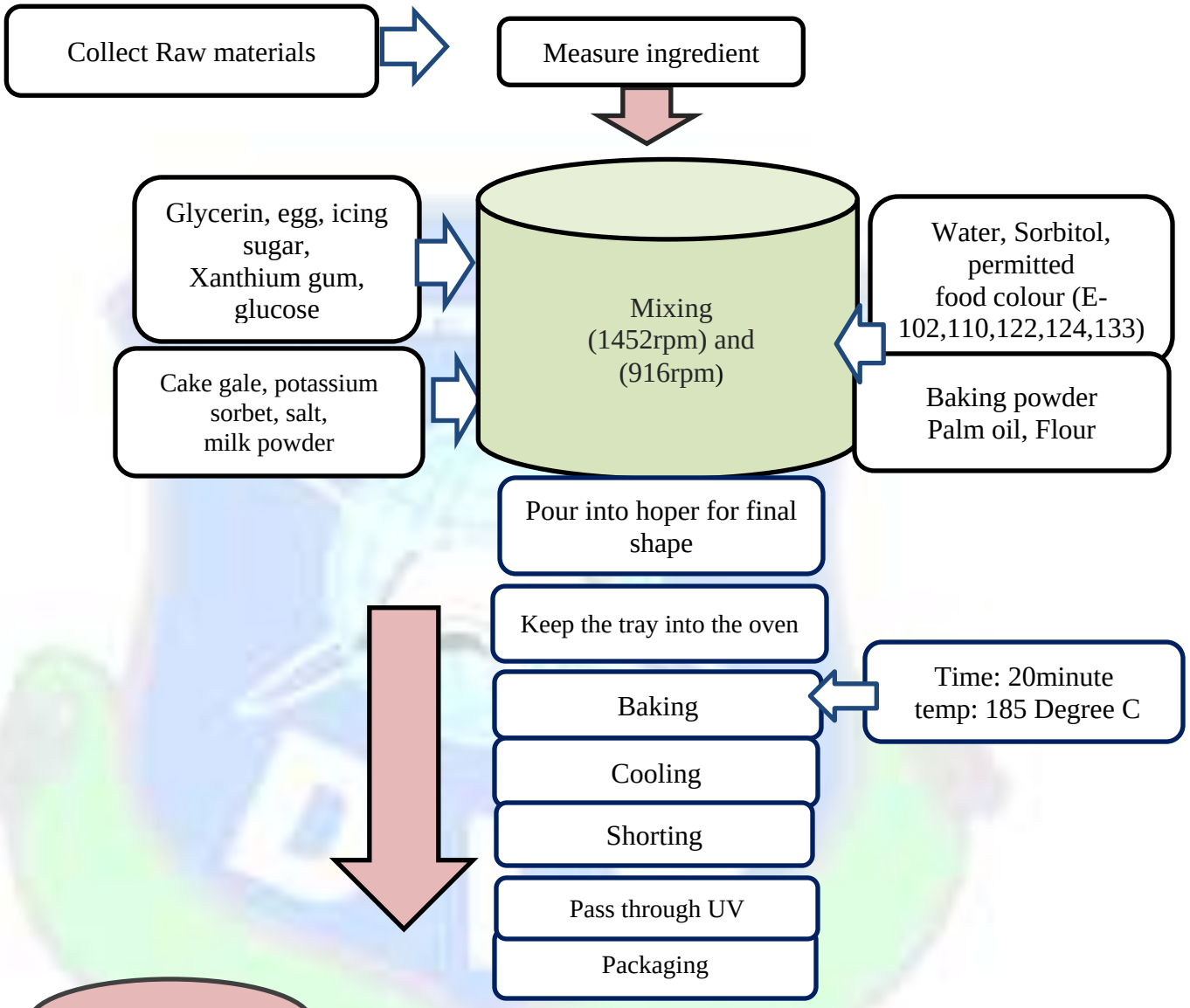
3.2.1 INGREDIENT:

- Flour
- Water
- Salt
- Milk powder
- Glycerin
- Egg
- Icing sugar
- Xanthium Gum
- Cake gel
- Potassium sorbet
- Sorbitol
- Baking powder
- Plum oil
- Artificial chocolate Flavor
- Permitted Food color
- Cocoa powder
- Cocoa past

3.2.2 EQUIPMENT:

- Measuring balance
- Precision Mixing Machine
- Tray
- Baking Trolley
- Rotary rack oven
- UV Tunnel
- Final shaping machine
- Automatic Dough Roller
- Horizontal Packaging machine

3.2.3 Flow Diagram of cupcake (chocolate



NOTE:

- Mid Sealing Temperature 130°C and 153°c end sealing
- Before baking weight :18gm
- After baking weight: 14gm
- Packaging Foil length 120mm
- Three-layer foil used
- Net weight 14gm
- Best before use 6 month

3.3 PRODUCT NAME: FRUIT FLAVOUR CAKE

- **3.3.1 Ingredients:**
- Flour
- Water
- Salt
- Milk powder
- Glycerin
- Egg
- Icing sugar
- Xanthium Gum
- Cake gel
- Potassium sorbet
- Sorbitol
- Artificial fruit flavor
- Baking powder
- Plum oil

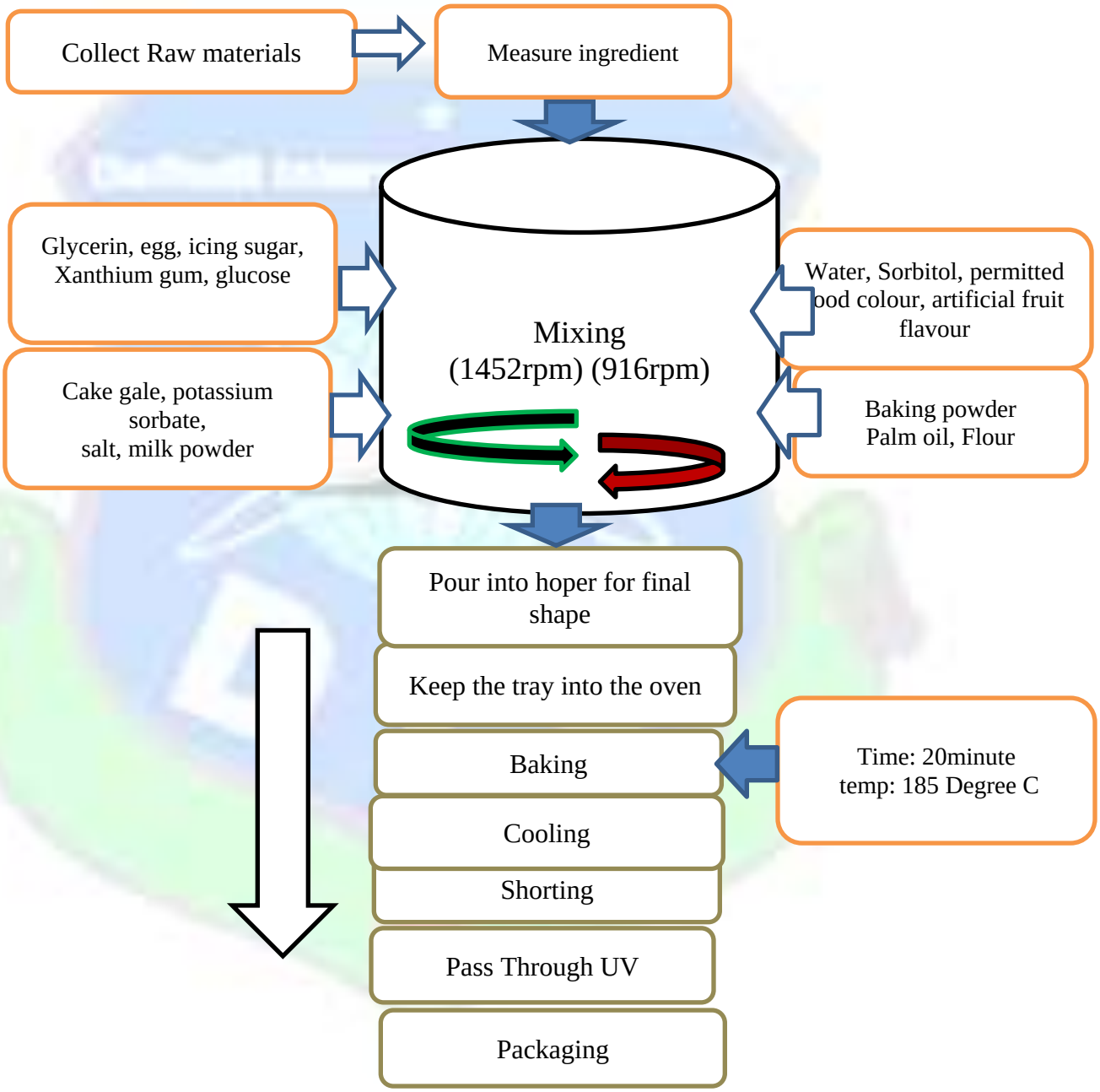
3.3.2 EQUIPMENT:

- Measuring balance
- Mixing Machine
- Tray
- Baking Trolley
- Rotary rack oven
- UV Tunnel
- Final shaping machine
- Automatic Dough Roller
- Horizontal Packaging machine

Note:

- Mid Sealing Temperature 130°c and 153°c end sealing
- Before baking weight :18gm
- After baking weight: 14gm
- Packaging Foil length 120mm
- Three-layer foil used
- Net weight 14gm
- Best before use 6 month

3.3.3 Flow Diagram of cupcake (Fruit flavor cake):



3.4 PRODUCT NAME: SALTED BISCUIT

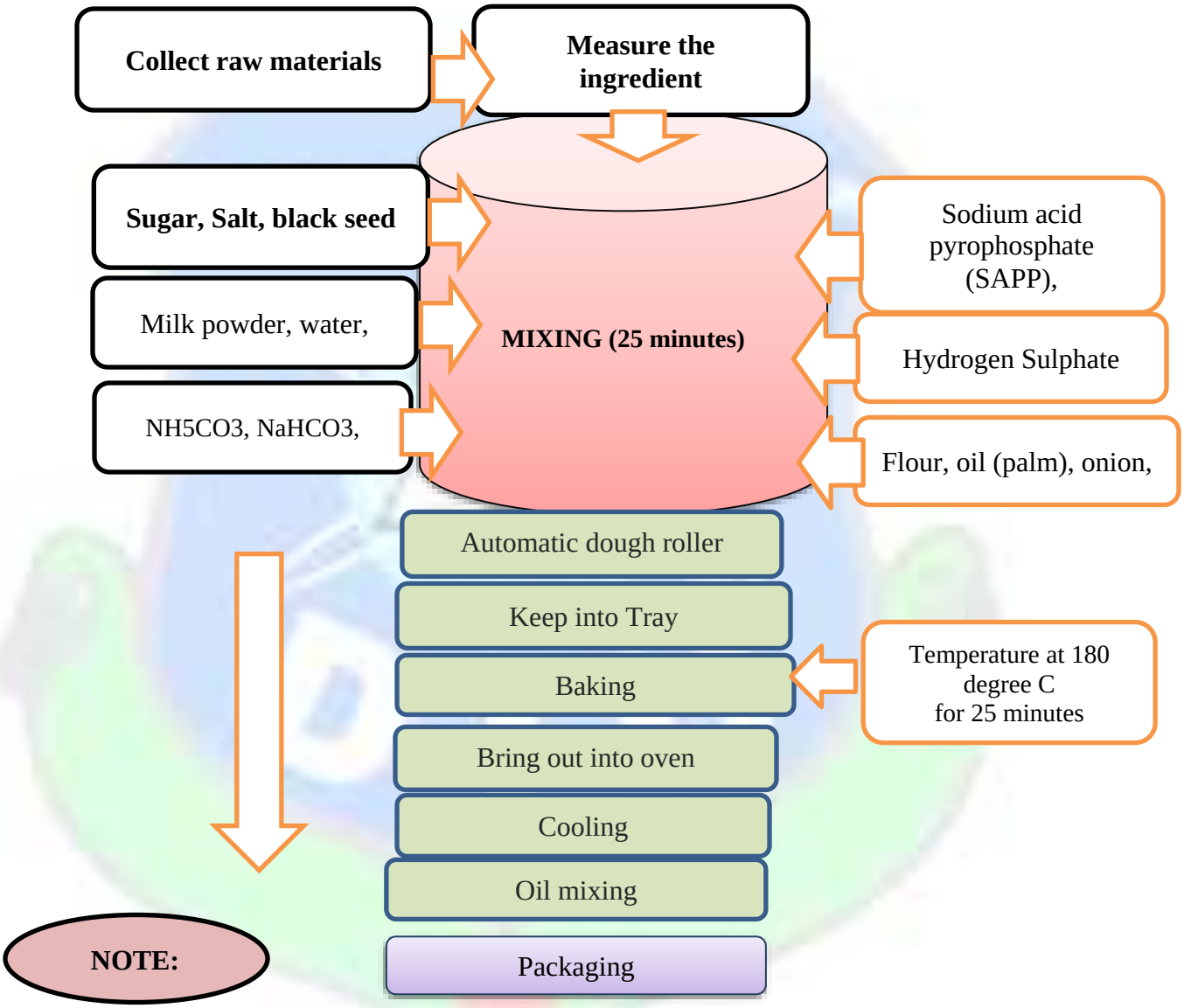
3.4.1 INGREDIENT:

- Sugar
- Salt
- Black seed
- Milk powder
- Water
- Ammonium bi-carbonate
- Sodium bi-carbonate
- Sodium Pyro-Phosphate
- Hydrogen Sulphate
- Onion
- Oil
- Flour

3.4.2 EQUIPMENT:

- Measuring balance
- Dough Roller
- Dicing machine
- Continuous Band Sealer
- Mixing Machine
- Baking tray
- Baking trolley
- Rotary rack oven

3.4.3 Flow Diagram of Salted Biscuit



NOTE:

- Net weight: 60g
- Shelf life: 1 years
- Foil used for Packaging: Aluminum Foil
- Foil Layer :3 Layer
- Primary Packaging: Mini plastic Tray
- Sealing: Automatic Sealing Machine (175 degree C)
- Batch Size: 100 Kg

3.5 PRODUCT NAME: PEANUT COOKIES

3.5.1 INGREDIENT:

- Crushing peanut cookies
- Palm oil
- water
- powder milk
- salt
- flour
- icing sugar
- Baking powder
- Sodium bicarbonate
- Peanut flavor liquid
- Flavor enhancer sweet
- Ammonium bicarbonate

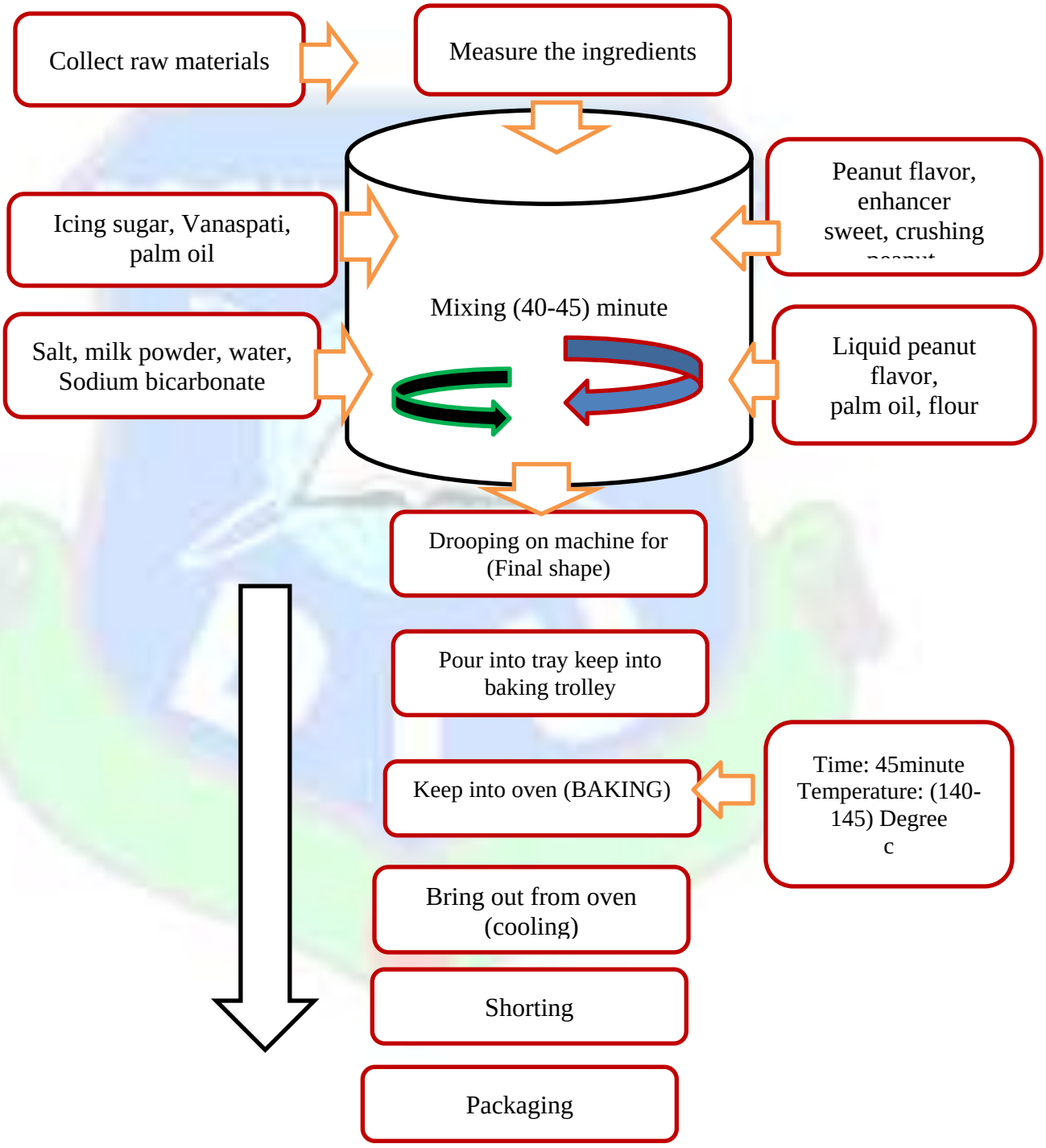
3.5.2 EQUIPMENT:

- Measuring balance
- Dicing machine
- Continuous Band Sealer
- Mixing Machine
- Baking tray
- Baking trolley
- Rotary rack oven
- Drooping machine for final shaping
- Rotary rack oven

NOTE:

- Mixing time: 40-50 minutes
- Baking time :35 minutes
- Baking temperature :140 Degree C
- Net weight :80gm (each packet)
- Sealing temperature: vertical 166 Degree C
- Sealing temperature: horizontal 175 Degree C
- Flour: 28% glutens
- Packaging room temperature :(18-22) Degree C
- Moisture content: below 3 %
- Before baling weight: 11gm
- After baking weight: 9gm
- Packaging quantity :350gm and 1kg plastic jar

3.5.3Flow Diagram of Peanut Cookies



3.6 PRODUCT NAME: VANILA COOKIES

3.6.1 EQUIPMENT:

- Measuring balance
- Dicing machine
- Continuous Band Sealer
- Mixing Machine
- Baking tray
- Baking trolley
- Rotary rack oven
- Drooping machine for final shaping
- Rotary rack oven

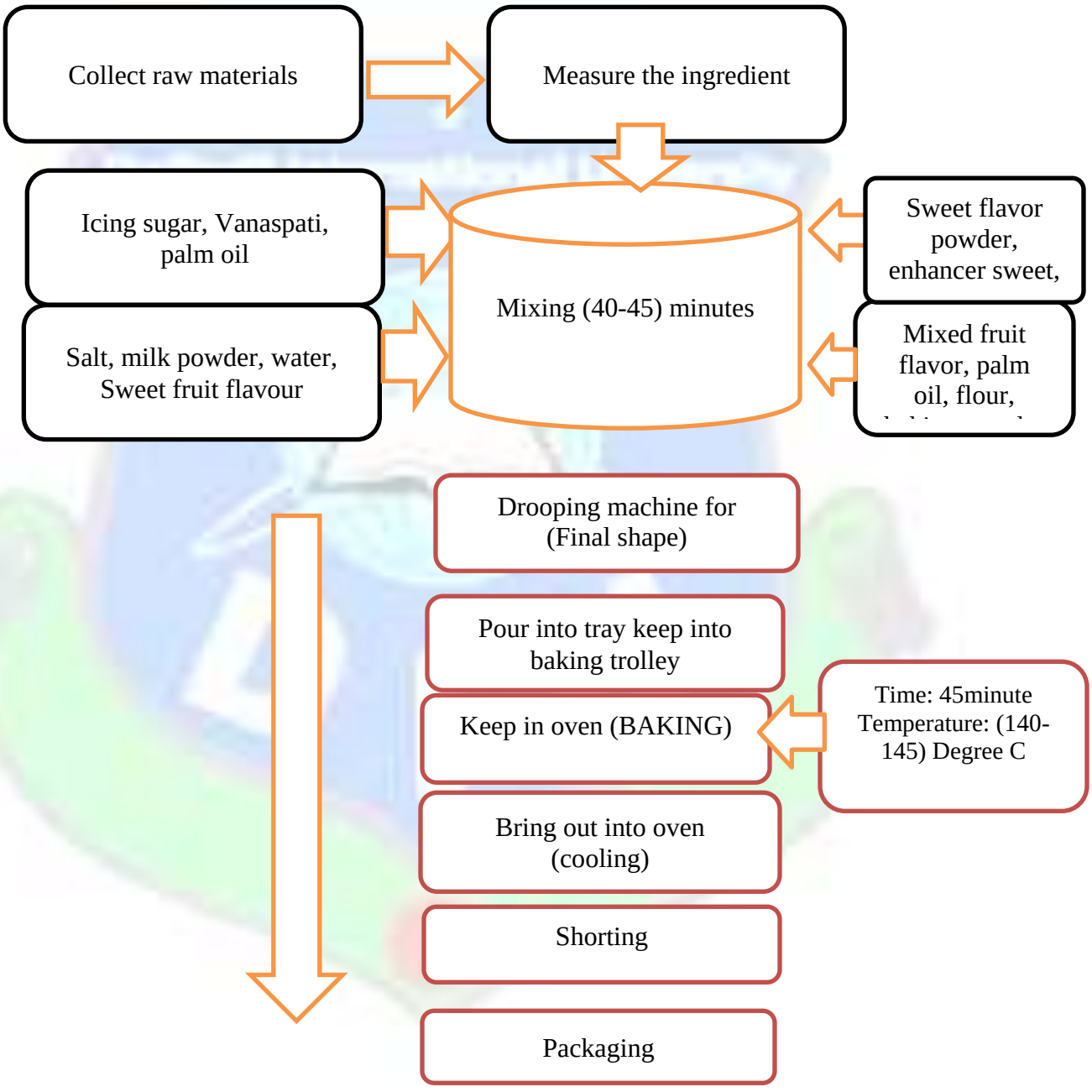
3.6.2 INGREDIENT:

- Palm oil
- water
- powder milk
- salt
- flour
- icing sugar
- baking powder
- flavor enhancer sweet
- Mixed Fruit flavor
- Sweet fruit flavor
- Vanilla powder
- Vanaspati

3.6.3 NOTE:

- Mixing time :40-50 minutes
- Baking time: 35 minutes
- Baking temperature :140 Degree C
- Net weight :80gm
- Sealing temperature: vertical 166 Degree C
- Sealing temperature: horizontal 175 Degree C
- Flour: 28 % glutens
- Packaging room temperature:(18-22) Degree C
- Moisture content: below 3 %
- Before baling weight: 11gm
- After baking weight: 9gm
- Packaging quantity :350gm and 1kg plastic jar

3.6.4 Flow Diagram of vanilla Cookies



3.7 PRODUCT NAME: Cookie's biscuit (Anarkoli shape)

3.7.1 EQUIPMENT:

1.Measuring balance

2.Dicing machine

3.Continuous Band Sealer

4.Mixing Machine

5.Baking tray

6.Baking trolley

7.Rotary rack oven

8.Drooping machine

9.Rotary rack oven

3.7.2 INGREDIENT:

1. Palm oil

2.water

3.powder milk

4.salt

5.flour

6.icing sugar

7.baking powder

8.Vanilla powder

9.Vanaspati

10.Mixed fruit flavor

11.flavor enhancer sweetness

3.8 PRODUCT NAME: DRY CAKE

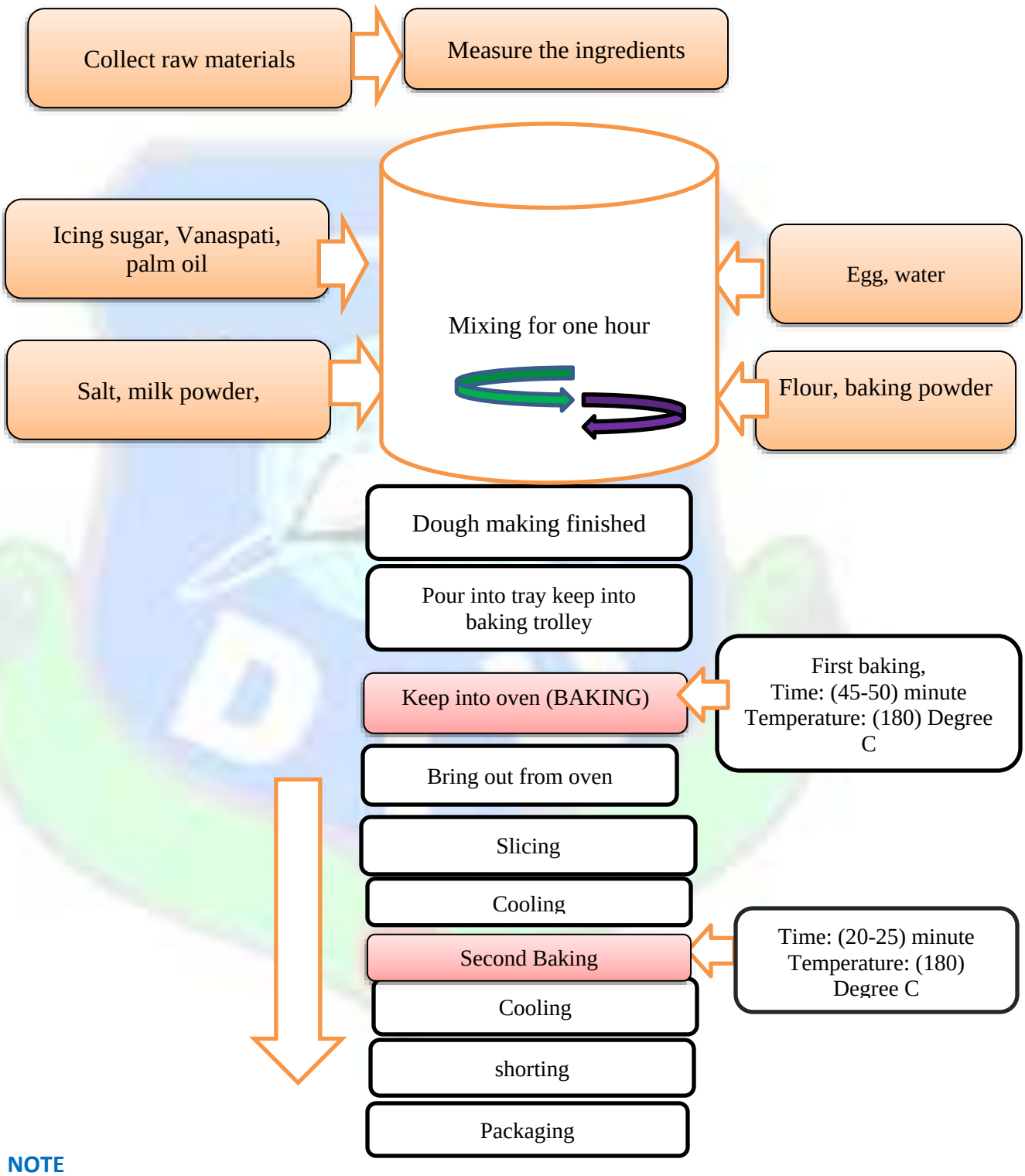
3.8.1 Ingredient:

- Sugar
- Vanaspati
- Milk powder
- Egg
- Water
- Icing sugar
- Salt
- Gee
- Palm oil
- Baking powder
- Flour

3.8.2 Equipment:

- Measuring balance
- Dicing machine
- Continuous Band Sealer(packaging)
- Mixing Machine
- Baking tray
- Baking trolley
- Rotary rack oven

3.8.3 Flow Diagram of Dry cake



NOTE

- Moisture content: below 3%
- Packaging room temp: 20 Degree

3.9 PRODUCT NAME: TEA TOAST

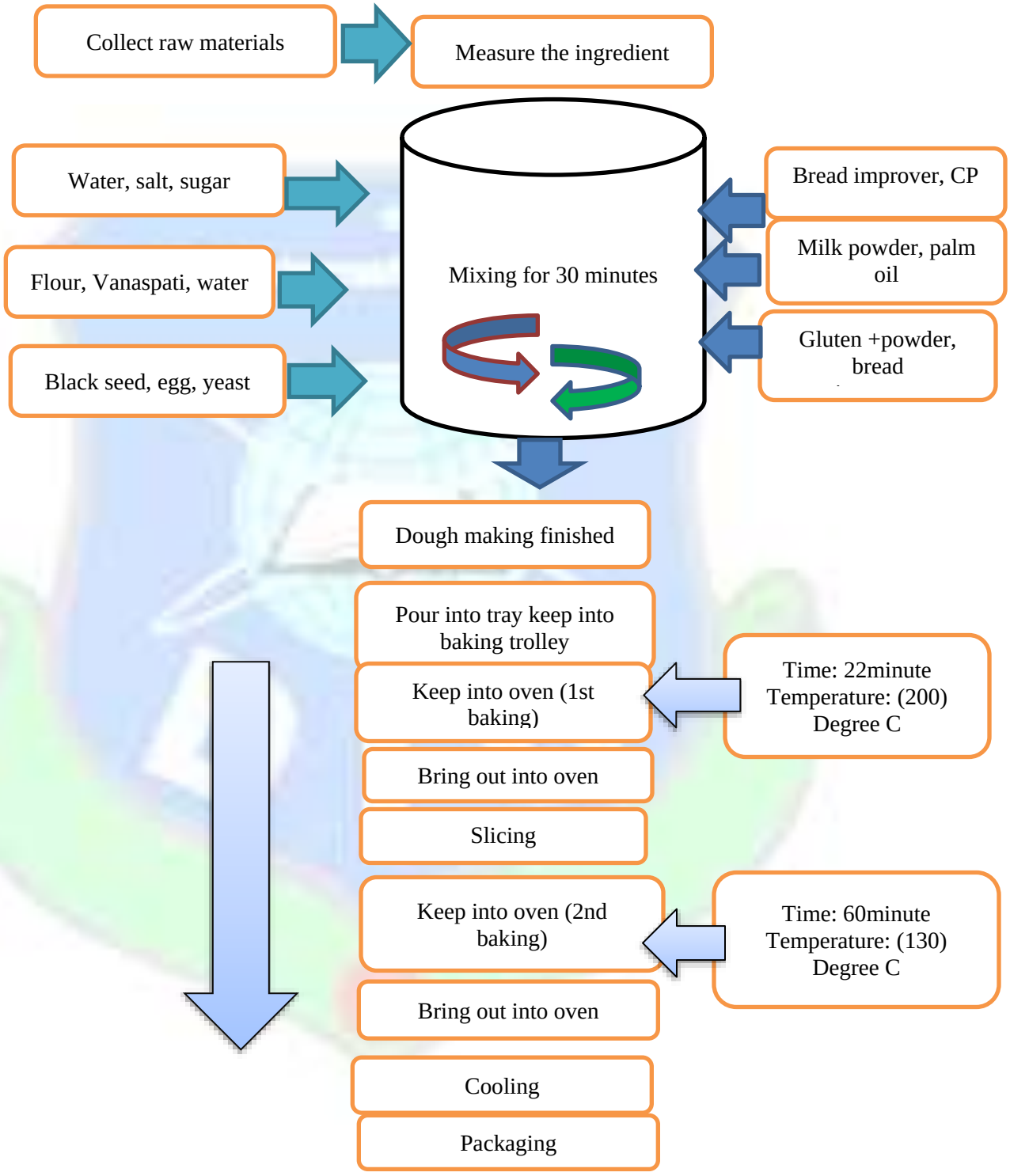
3.9.1 Ingredient:

- Water
- Salt
- Sugar
- Flour
- Vanaspati
- Bread improver powder
- Calcium propionate
- Milk powder
- Gluten powder
- Egg
- Palm oil
- Water
- Bread improver
- water
- black seed
- Yeast

3.9.2 Equipment:

- Measuring balance
- Dicing machine
- Continuous Band Sealer
- Mixing Machine
- Baking tray
- Baking trolley
- Rotary rack oven

3.9.3 Flow Diagram of Tea Toast



NOTE:

Moisture content: below 3%

Packaging room temp: 20 Degree C

3.10 PRODUCT NAME: SPEACIAL GHEE TOAST

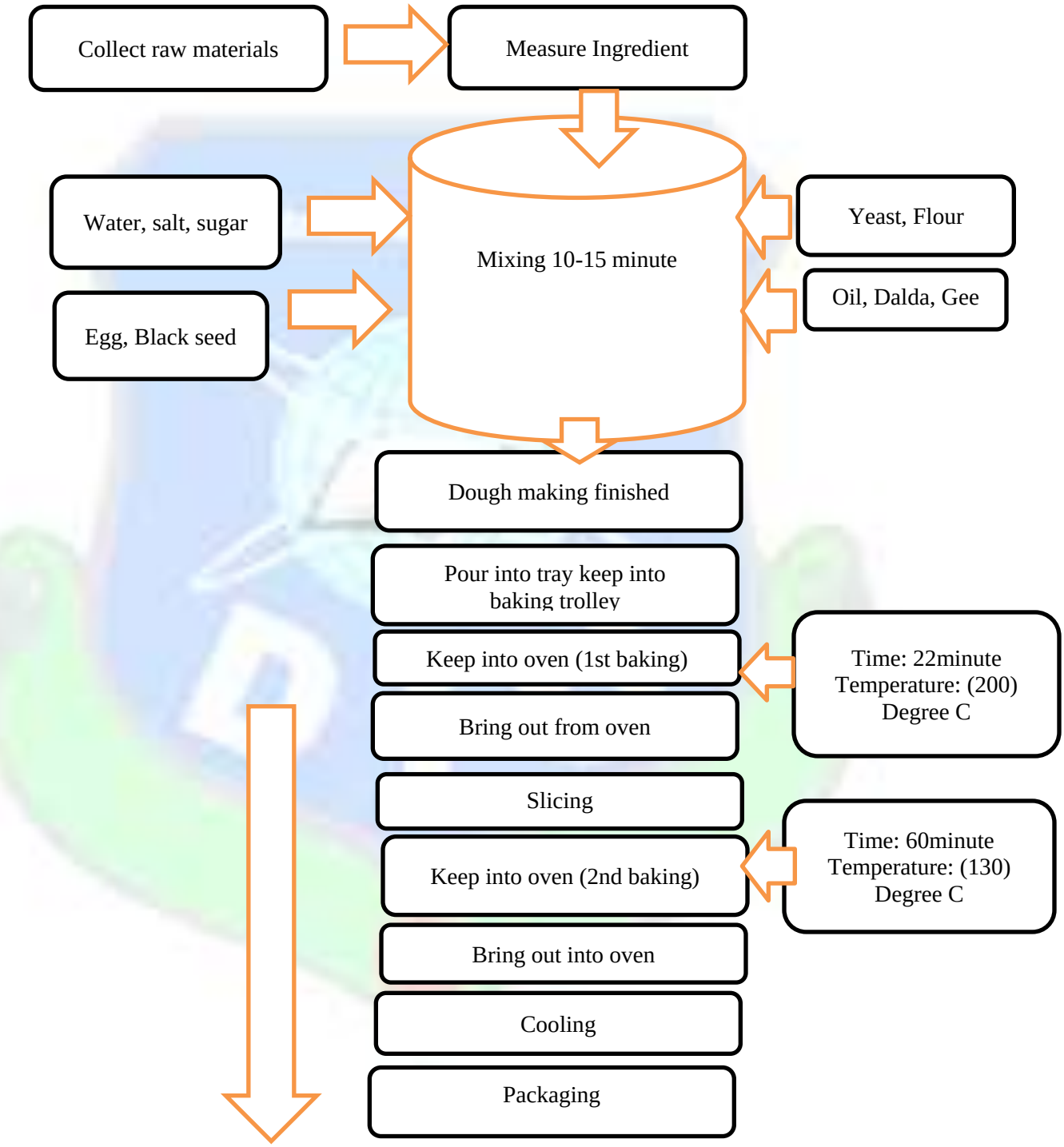
3.10.1 Ingredient:

- Sugar
- Salt
- Egg
- Black seed
- Yeast
- Flour
- Oil
- Dalda
- Gee

3.10.2 Equipment:

- Measuring balance
- Dicing machine
- Continuous Band Sealer
- Mixing Machine
- Baking tray
- Baking trolley
- Rotary rack oven

3.10.3 Flow Diagram of special ghee Toast



NOTE:

- Moisture content: below 3%
- Packaging room temp: 20 Degree C

CHAPTER –FOUR

Function of Some Ingredients of Bakery

4.Function of Some Ingredients

Ingredient:

4.1 EGG

- It functions as an emulsifier.
- It enhances the flavor
- Increase the nutritional value.
- It aids in the formation of healthy structure.

4.2 Flavor:

1.Extend the shelf life of the product;
2.improve the nutritional value;
3.Extend the shelf life of the product;
4. Prevent food from spoiling.
5.Alter/maintain color.

4.3 Flour:

1. Carry out the functions of a balking agent.
2. Assist in the formation of the structure
3.Shelf rising flour act as rising agent.

4.5 Sugar:

1.Bulking agent and holds air with fat mixer.
2.Increase sweetness.
3.Attracts moisture and improve texture

4.6 Fat:

1.works as a great emulsion.
2.Work as Binding agent.
3. Extend shelf life.
4. Provide texture in biscuit

4.7 Sorbitol:

1.Preserve the moisture
2.Add sweetness to the products
3.Provide extra texture

4.8 Yeast:

1. Produce carbon dioxide
2. Helps in softening the dough
3. Works as leavening agent

4.9 Glycerol:

1. Works as softening agent
2. Prevent sugar from crystalizing.

4.10 Gluten:

1.Helps to rise the dough
2.Trap gas inside dough and helps it puffing
3.Gives texture to the product

CHAPTER: FIVE

Function of some Machinery for Baking

- **5.Function of Some Machinery**

5.1 Rotary Rack Oven:

1. It's primarily used for baking and drying purposes.
2. It is utilized for thermal heating.

5.2 Electric mixer:

1.It is used for various baking procedures such as beating, stirring, and mixing.
2.Appliances which can mix beat and knead batters a dough.

5.3 Weighing scale:

1.essential equipment of an industry
2. It is measuring instrument for determining the weight or mass of an object.

5.4 Shaping and panning equipment:

1.Breads are shaped by machines exists to shape baguettes or rolls automatically.
2. Case is generally shaped by making them in tins.
3. Biscuits can be shaped by cutting either rotating or vertical wire shaped by rolling or cutting.

5.4 Cooling rack:

1.This is a necessary piece of equipment for allowing air to circulate
2. Used to cool bread and cake after baking
3.Made of stainless steel

Fig: Cooling rack

5.5 Bread slicer:

1.Used to cut bread into homogenize shape
2.It's a semi-automated machine

Fig: Bread slicer

5.6 Sealer:

1.Used to pack products
2.Seal by heating the jaw

CHAPTER -SIX

MANUFACTURING PROCESS AND FLOW DIAGRAM

SECTION: DRINKS PRODUCTS

- **6.PRODUCT NAME**: **Alin Mango Drinks**

6.1 Ingredients:

- Water
- Mango Pulp (15%)
- Sugar
- Stabilizers: Pectin (E440)
- Citric Acid (E330)
- Ascorbic Acid (E300)
- Salt
- Preservative: Sodium Benzoate (E211)
- Sodium Metabisulphite (E223)
- Food Color (Beta-carotene: E160a)
- Artificial Flavor (Mango).

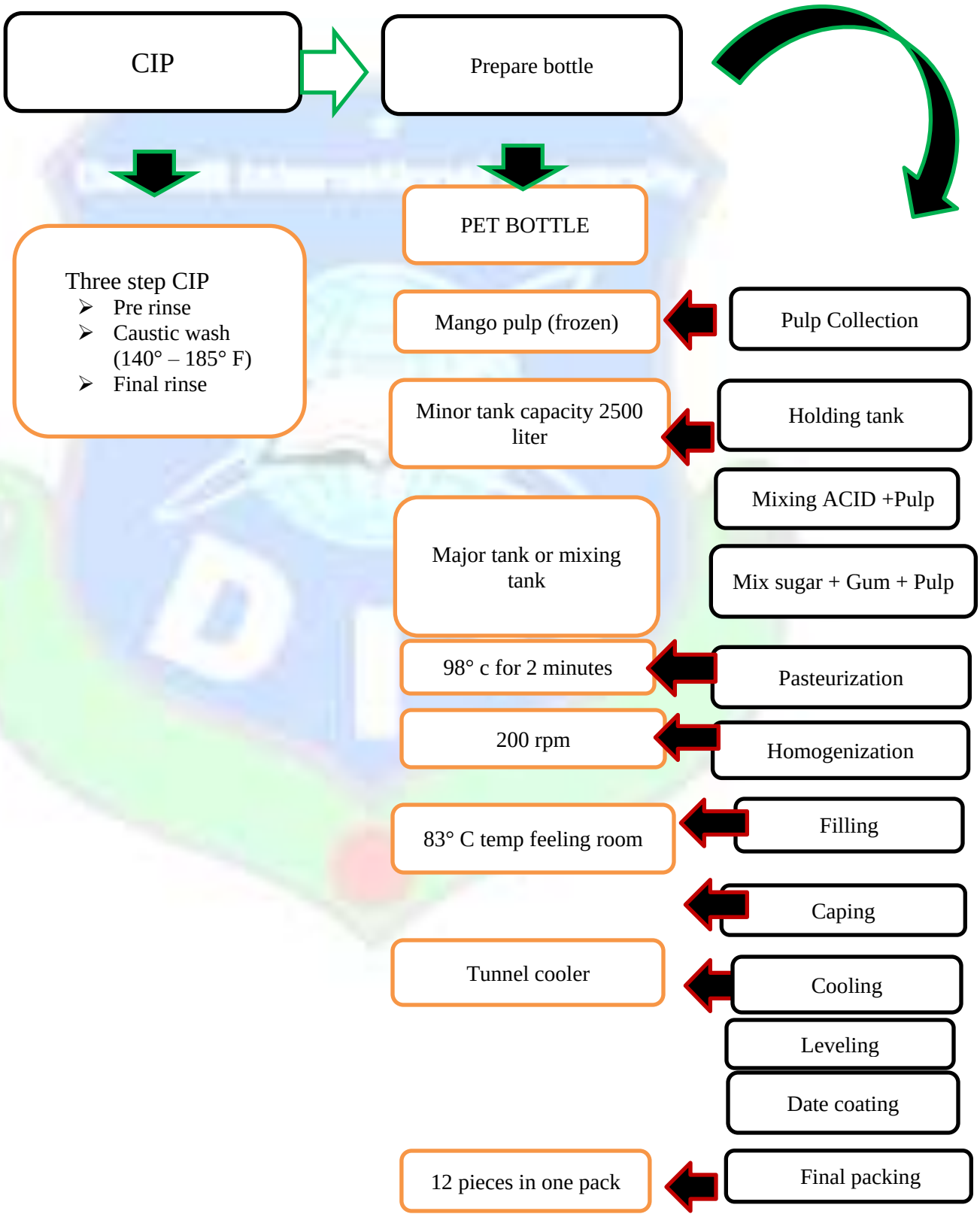
6.2 Equipment:

- Weighing Machine
- Juice plant
- Bottle
  - Burette and chemicals for titrations
- PH meter
- Brix meter

Note

1.Must maintain personal and chemical hygiene
2. Carefully titrate and measure ingredients
3.CIP should be done by maintain all steps
4.Carefully observe date coting
5.Calculation should be done carefully

6.3 Flow Diagram of mango drinks



6.1.1 PRODUCT NAME: ALIN LYCHEE DRINKS

6.1.2 Ingredients:

1.Water
2.Sugar
3.Lychee pulp minimum 10%
4.Stabilizers: Pectin (E440)
5.Citric Acid (E330)
6.Ascorbic Acid (E300)
7-Thickener (Ins 466)
8-Acidity Regulator (Ins 330)
9.Salt

Preservative:

- Sodium Benzoate (E211)
- Sodium Metabisulphite (E223)

11.Food Color
12.Artificial Flavor (lychee).

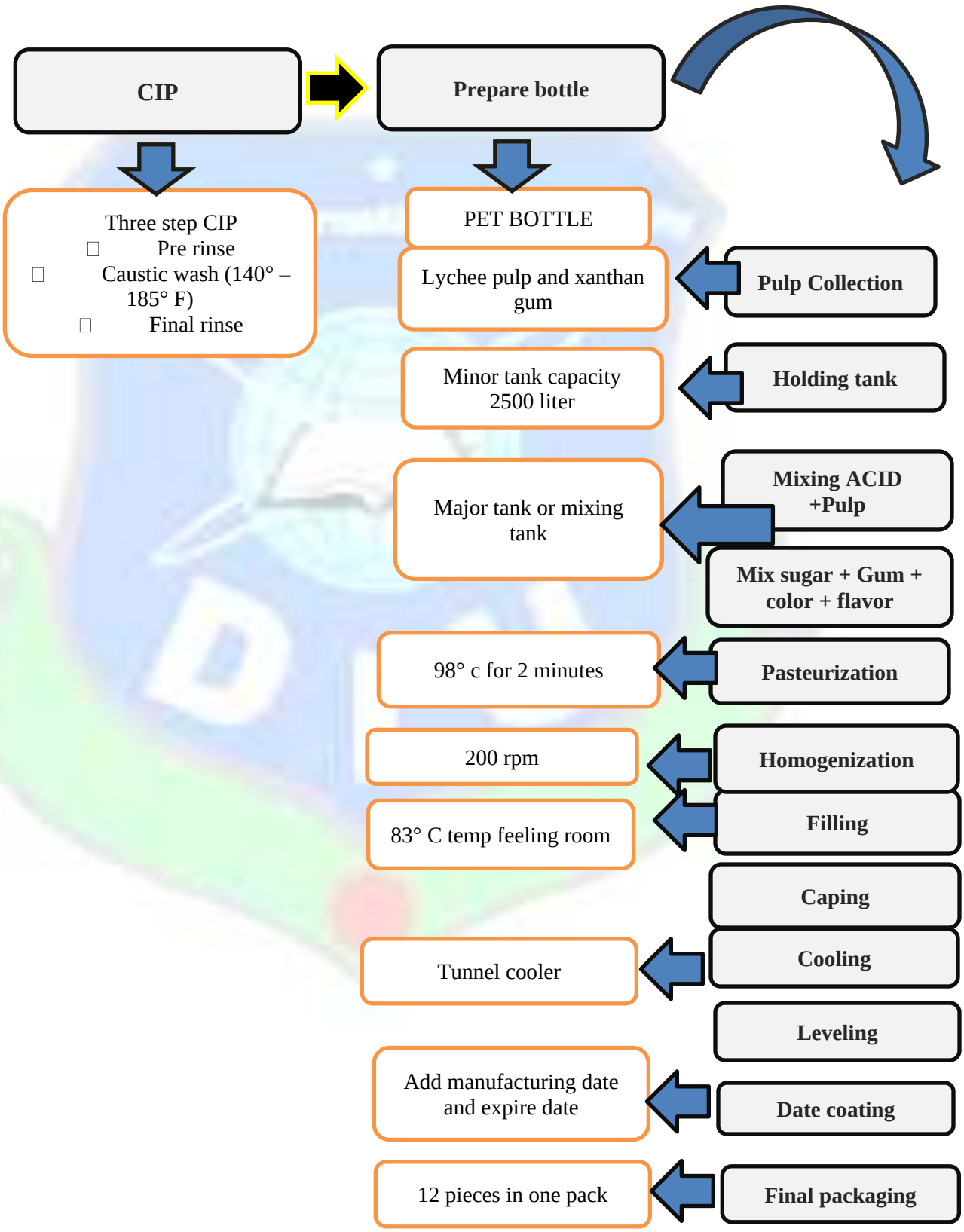
6.1.3 Equipment:

Weighing Machine
Juice plant
Bottle
Burette and chemicals for titrations
PH meter
Brix meter

Note:

1. Must maintain personal and chemical hygiene
2.Carefully titrate and measure ingredients
3.CIP should be done by maintain all steps
4.Carefully observe date coting
5. Calculation should be done carefully

6.1.4 Flow Diagram of Lychee drinks



- **6.2 PRODUCT NAME: ALIN ORANGE DRINKS**

6.2.1Ingredients:

- Water
- Sugar
- orange pulp minimum 15%
- Stabilizers: Pectin (E440)
- Citric Acid (E330)
- Ascorbic Acid (E300)
- -Thickener (Ins 466)
- -Acidity Regulator (Ins 330)
- Salt
- Preservative: Sodium Benzoate (E211) & Sodium Metabisulphite (E223)
- Artificial Food Color
- Artificial Flavor (orange).

6.2.2 Equipment:

- Weighing Machine
- Juice plant
- Bottle
- Burette and chemicals for titrations
- PH meter
- Brix meter

6.2.4NOTE:

- Must maintain personal and chemical hygiene
- Carefully titrate and measure ingredients
- CIP should be done by maintain all steps
- Carefully observe date coting
- Calculation should be done carefully
- Feeling room temperature must be 80 Degree C +

6.2.3Flow Diagram of Orange Drinks

Chapter -SEVEN

Function of Some Ingredients of Drinks products

7.1 Citric Acid (E330)

- Citric Acid E330 is a monohydrate citric acid.
- Citric Acid E330 is a sour, white crystalline powder that is 99.5-101.0%.
- It is used as an acidulant,
- flavoring agent, preservative
- anti-staling agent in food and beverage products.

7.2 Pectin (E440) for drinks

- Pectin is used for to give a jelly-like consistency
- improves the texture of drinks.
- It's also used as a stabilizer in fruit juices
- Helps to preserve the structure and prevent the separation of particles within the drink.

7.3 Sodium Benzoate (E211)

- Prolong shelf life of drinks products
- Prevent oxidation
- Preserve flavor and color

7.4 Xanthan gum

- Inhibits ice crystallization
- Promote gel like structure
- It's a hydrocolloid
- Attracted to water

7.5 Caustic

- cleaning products that contain highly alkaline and corrosive caustic kills germs
- used to clean metal pipe or machine

7.6 Chemicals

- NaOH used to titrate
- Phenolphthalein works as indicator
- Distil water to clean apparatus

CHAPTER-EIGHT

Function of some Equipment's for Drinks production

8.1 Pasteurizer

- Increase shelf life
- Reduce spoilage
- Inhibits growth of microbes
- inactive all spore forming pathogenic bacteria
- Provide high pressure
- Stop enzyme activity

8.2 Homogenizer

- Increase number of inter molecular bonding between particles
- to create a stable emulsion
- making superfine emulsify liquid of liquid-liquid combinations
- helps to mix evenly
- makes homogenize particles

8.3 Mixing tank

- Made of stainless steel
- Used to mix different ingredients
- Can handle high pressure

8.4 Juice filler

- Used to pour juice into the bottle
- Fully automated
- Can fill 24 bottles at a time
- Rinse bottle before filling

8.5 Cooler

- Made of stainless steel
- Cold water spread on the products
- Connected with conveyor belt

8.6 Levelling machine

- Fully automated
- Attached level on bottle with robotic hand
- Fast and accurate

8.7 Date coating machine

- Pre-Programmed date attached to the bottle
- Manufacturing date and expire date coated on the bottle
- laser ray used in this machine

8.8 Brix meter

- Used to determine sugar content in juice
- Range 0-32
- More number means more sugar content
- Degree brix shows sugar /100 g

8.9 PH Meter

- used to determine acidity and alkalinity
- ranger 0-14
- 7 is neutral
- Bellow 7 means acidic, increase acidity with lowering value
- Over 7 is basis, increase alkalinity with the higher value

8.10 Bottle

- PET plastic bottle used to juice
- Its low in price
- Can handle heat and high pressure
- Food grad plastic,
- does not react with product

CHAPTER-NINE

Department of QC and QA

9.1 Department of QC:

Quality control (QC) is a set of operations aimed at assuring product quality by discovering flaws in the final product. It's a reactive procedure that tries to find (and fix) flaws. Quality control (QC) is a set of operations aimed at assuring product quality by discovering flaws in the final product. It's a reactive procedure with the goal of identifying (and correcting) problems in produced items. Quality development Quality maintenance and quality improvement in the various departments of design and manufacturing, for achieving the twin objectives of: Economical production and customer satisfaction.

9.1.2 Department of QA:

- Critical control point identification/sampling program.
- In-process analysis, records and reporting packaging specifications.
- Label specifications.
- Cleaning and sanitizing program.
- Good manufacturing practices (GMP) requirements.
- Recall program.
- Warehousing, shipping and receiving program.
- Laboratory analysis

:

9.1.3 PSI (pre shipment inspection) Result shit:

Invoice no:

Inspection date:

Inspection place:

Date of shipment:

Name of Inspector:

Country of Export

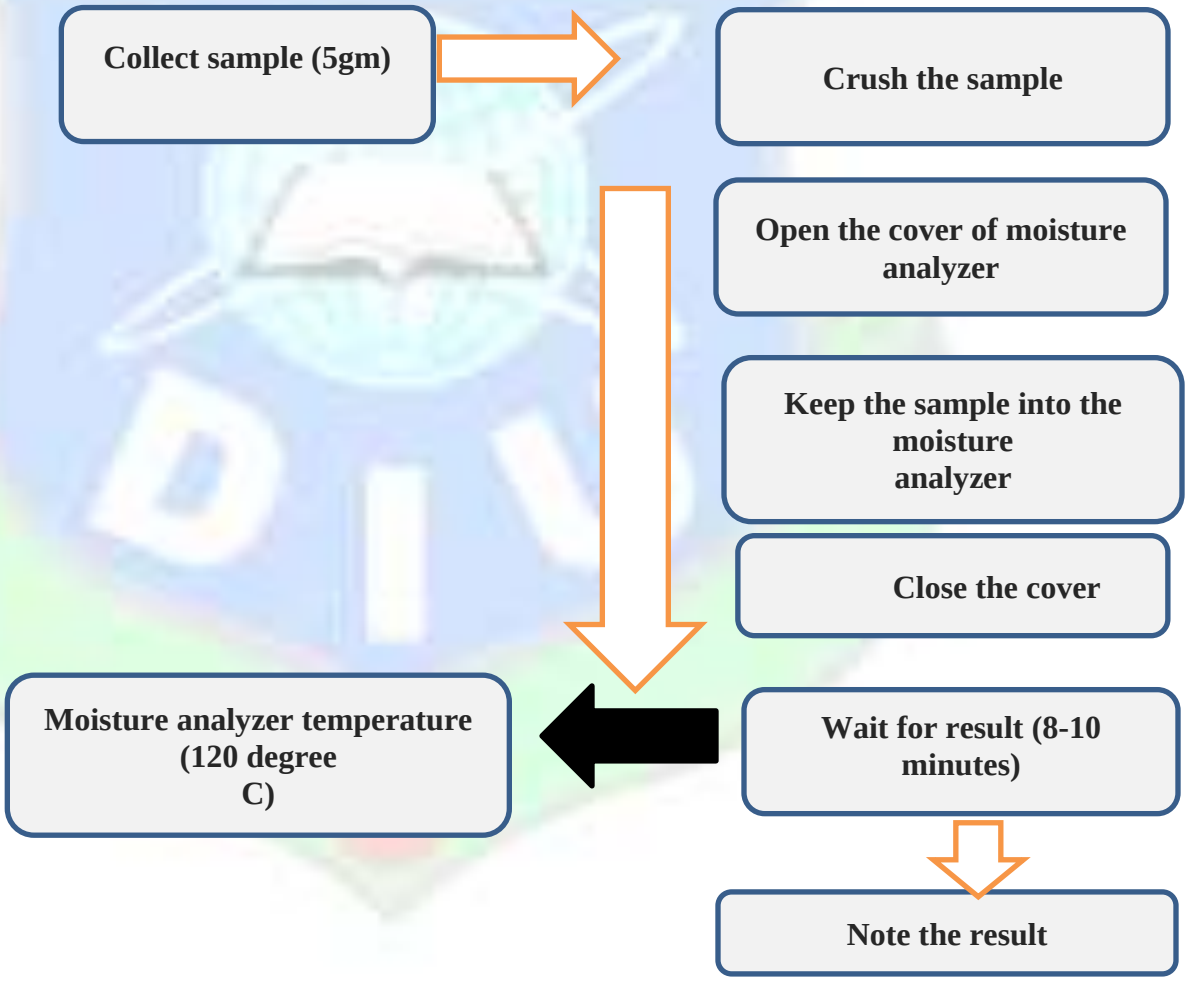
Observation/product name	Observation time	okay/not	QC officer name	signature
Foil pack, pet bottle and glass jar,				
MFG Date (as per job order)				
EXP Date(as per job order)				
Shelf life				
Coding text (right / wrong)				
Batch no,				
Moisture				
Fineness/ transparency				
Gross weight/ volume				
colour				
Flavour				
Taste(if required)				
Texture /viscosity /smooth flow				
Wrapping condition(ok/not ok)				
Loose wrapping/sealing(%/CTN)				
Bottle filling(half/full)				
Leakage(%/CTN)				
Without coding(nil/present)				
Auto strapping(nil/present)				
Shipping mark(right/ wrong)				
Declared quantity/ carton				
Obtained quantity/ carton				
Declared quantity/ Inner pack				
Obtained quantity/ Inner pack				
Total carton quantity (ordered)				
Sampling carton quantity				
Production status(% of completed)				
Special instruction(ok/not ok)				
Remarks:				

9.2 Lab Taste: QUALITY TEST OF BAKERY PRODUCTS

9.2.1Moisture content: Moisture content refers to how much water is present

in a product. It has an impact on a substance's physical qualities, such as weight, density, viscosity, conductivity, and others. It is usually determined by the amount of weight lost after drying. Moisture content can be determined in a variety of ways.

9.2.2Test procedure:



9.2.3Result:

Moisture content of bakery product is: cake: (13-15) %

Tots :(0.5-1.5) %

9.2.4Equipment list of Lab:

1. Micro oven
2. Moisture meter
3. Digital meter
4. Viscometer
5. Water bath
6. Distilled water plant
7. Density meter
8. Thermometer
9. pH meter
10. Filter paper
11. Microscope
12. Colony counter
13. Autoclave
14. sterilizer
15. Laminar air flow
16. Refrigerator

9.2.5 Gluten test of Flour:

Take 25 gram of flour and make dough by adding water. After making the dough wash the dough by squeezing the dough in the water. When all the starch washed out, we find a ball of gluten then weight the gluten and calculate the result.

Calculation=**Weight of the gluten ×100 /weight of flour**

9.2.6 Fat test of Biscuits, Cookies, Toast:

Fat test is conducted by Soxhlet Extraction Method. First, we have to dry the sample to remove moisture then place the sample in the Thimble and place it into the Soxhlet apparatus. Then take 90 ml Petroleum ether in the round bottom flask. Heat the mantle for 5-6 hours. After that put out the thimble and dry it and weight the thimble and calculate the result

Calculation: W1= Empty thimble, W2= Thimble with sample, Ws= Weight of sample

$$\text{Fat\%} = \frac{W2 - W1}{Ws} \times 100$$

9.2.7 Fat test of Ghee:

Take 5gm ghee in the Butyrometer then Take 10ml Sulfuric acid. After that add 1ml of amyl alcohol and shake well. Then add hot water in the Butyrometer as per need. Then place the Butyrometer in the Centrifuge Machine. Read the fat column from the lowest point of the meniscus of the interface of the fat to the O-mark of the scale and read the fat percentage.

9.3 QUALITY TEST OF DRINKS PRODUCT

9.3.1 pH TEST:

pH is a measure of how acidic/basic water is. The range goes from 0 - 14, with 7 being neutral. pH of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base. ... pH is reported in "logarithmic units".

9.3.2 PROCEDURE:

START

Place pH meter in drinks sample

Wait for a while

Note the value

Determine the value based on PH scale

Clean the PH meter

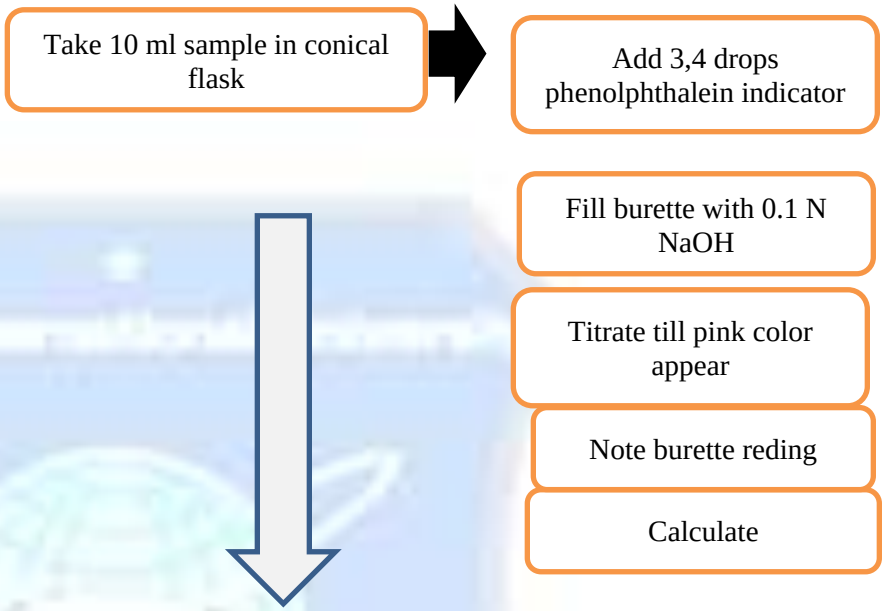
9.3.3. Brix test:

Brix meter used to determine the total soluble solid in drinks products.
One degree Brix is 1 gram of sucrose in 100 grams of solution and represents the strength of the solution as percentage by mass.

9.3.4 Procedure:

Clean the lance by distil ⇨ water rub with tissue ⇨ drop 1 drop of sample ⇨ close the clip ⇨ View through pointer ⇨ observe the value ⇨ note down value

9.3.5Acidity test: procedure



9.3.6 REAGENTS

1. **Sodium Hydroxide Solution, 0.1 N: Standard**
2. **Phenolphthalein Indicator, 1%**

9.3.7 Calculation: **Acidity = mL 0.1 NaOH / 10 g ×10**

Citric acid requirement for 2500-liter batch:
BR * N. NaOH * 64 *100 /10 *1000

9.3.8 NaOH normality Check:

5 ml potassium hydrogen palate

2,4 drops phenolphthalein indicator

Shake until color change

Calculation: **5* .225/5.28= .213 N NaOH**

9.4Microbial test:

9.4.1 Agar used for different microbes are:

1.TBC: nutrients agar / plate count agar
2. E-Coli: MacConkey agar
3.total coliform: EMB
4.selmonela: XDL agar
5.yeast/ mold =potato Dextrose agar

9.4.2 Apparatus:

LAF=laminar air flow
Incubator
Drying oven
Water bath
Micro pipette
Swab stick
Petri dish
Auto clave (moist based)

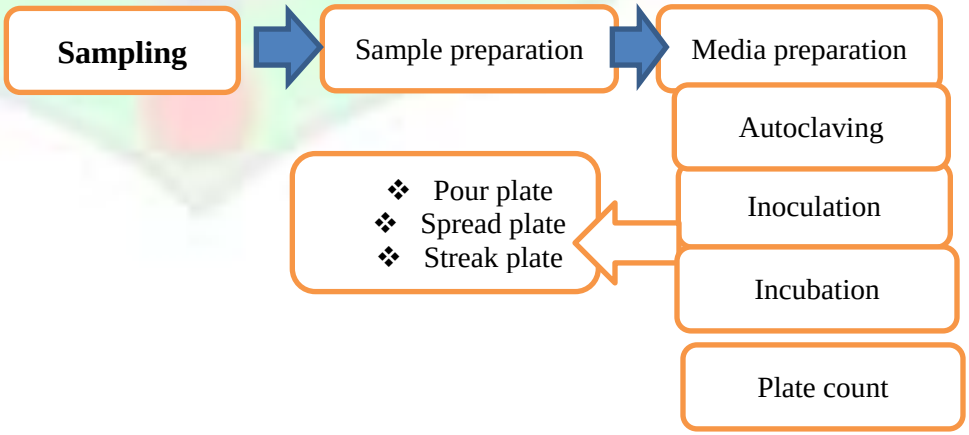
9.4.3Sample preparation:

1.solid- 10g sample in 90 ml H2O
2.liquid – 10 ml sample in 90 ml H2O /1g in 9 ml water

9.4.4Media preparation:

- Plate count agar: 23.5 g media in 1000 ml water /2.35 g in 100 ml
- MacConkey agar: 5.13 in 100 ml

9.4.5Procedure:



9.5 Packaging Materials checking parameters:

- **Carton Measurement:**

Height, Weight and Length measuring.

- **Gram per Square Meter (GSM) Test of Carton:**

Three types (3 ply, 5 ply & 7 ply) of carton are tested. The standard GSM value of these types' cartons are given below:

3 Ply: 500-600 g/m^2

5 Ply: 600-700 g/m^2

7 Ply: 800-900 g/m^2

Procedure:

- Select a particular area of the carton.
- Cut that particular area by GSM tester.
- Measure the weight of cutting portion by measuring balance and multiply the weight value by 100.
- Calculate the GSM value.

9.5.1 Bursting Strength Test of Carton:

Three types (3 ply, 5 ply & 7 ply) of carton are tested. The standard Bursting Strength value of these types' cartons are:

3 Ply: 5 kg f/cm2
5 Ply: 6.5 kg f/cm2
7 Ply: 6.5 kg f/cm2

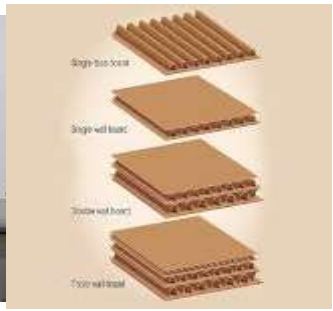
9.5.2Procedure:

The carton is placed into the bursting strength tester and then air pressure is forced on the carton at 25 psi.
The value is then observed.

Aluminum Foil Measurement: Length, Width and Thickness checking

Paper Pack: Length, Width, Height and GSM value checking

Paper Label: Length and Width checking.



CHAPTER: TEN

"Food safety and hygiene"

- **10.1 Food Safety and Hygiene:**

Food safety and hygiene are critical components of excellent industrial practices. Food safety and cleanliness must be maintained in order to retain a high-quality product. They are particularly concerned about food safety and cleanliness at "Alin Food Products Ltd." Every employee should adhere to a set of rules and regulations. Hairnets, a cap, a hand gloves, and musk is required for everyone. For hand sanitizer, they must use IPA (isopropyl alcohol). They schedule cleaning days on the first and last days of each month. They sanitize all of the machinery on these days. They scrub the floor of the production area three times a day. They clean the floor with cleaning products such as detergents.

- **10.1.2GMP Practice:**

GMPs are all-encompassing in manufacturing, covering every aspect of each operation to prevent dangers from occurring either in the supply chain or in the workplace. Their goal is to assure product integrity by following excellent operating procedures and ensuring that the highest standards are met at every stage the process, from testing to development to storage. By following GMPs, food industry professionals should expect to reduce contamination, testing failures, environmental difficulties, and potentially harmful variances.

10.1.3 Fumigation: is the use of fumigants (gaseous chemicals) to suffocate and kill pests within a structure. It is an invasive procedure that requires all other humans and animals to be outside of the home for anywhere from several hours to an entire week, so it is not often a first line of defense.


10.1.4Worker safety and facilities

"Alin Food" give their worker many facilities. They provide free medical treatment. They provide free food and accommodation for their worker. They also have insurance for them. A medical officer also presents in the industry. Worker work there in two shifts. Morning shift and night shift. Morning shift starts from 08.00AM to 08.00PM, and night shift starts from 08.00PM to 07.00AM.For avoid accidents like fire they use fire extinguisher and emergency exits are also there. During pandemic maintain distance, wearing mask and gloves was mandatory. before every shift While labor enter in the industry, their body temperature checked by thermal heat detector.


- **10.2 Export and Certification**

10.2.1 Export

Alin Food Products Ltd is a 100% export-oriented firm that manufactures and exports food products to various nations across the world. It has its own industry in Saudi Arabia, with a fully functioning setup, and exports its food to the UAE, Bahrain, Qatar, Oman, Kuwait, Italy, the United Kingdom, Malaysia (4 distributors in Malaysia—KL, Penang, Malacca), Singapore, and Jordan, among others. Alin has been in business for the past 12 years and is developing their market in different parts of the world. It had its own department (Export, Commercial, Accounts, Marketing, Administration & Human Resources, Purchase, Civil Service & Finance) Which is organized by well experienced man power.

10.2.2. Certification:

Alin Food Products Ltd. has BSTI certificate which is necessary for Bangladesh. They have some other certificate like ISO, Halal, BRC. certificate.

CHAPTER: ELEVEN

- **Conclusion:**

It has been a wonderful experience for me throughout this entire journey with "Alin Food." With the support of skilled QC and Production officer officers, my practical and analytical understanding grew significantly after this 30-day of internship.
It was a hands-on experience that will help me to establish my career in this sector.

The employees at "Alin Food ltd" was extremely helpful and ready to assist newcomers; I would like to express my gratitude for their kind demeanor and hospitality. It was an honor for me to work with such talented individuals. This internship helped to gain both intellectual and practical experience. I learned about the organizational culture and behavior of a large consumer goods manufacturing company in the country.
Furthermore, I was able to broaden my professional network during this internship. Finally, I am thankful to the Department of Nutrition and Food Engineering at Daffodil International University for providing me with this opportunity to gain knowledge and experience.

"Department of Nutrition and Food Engineering"
"Daffodil International University"