



Internship Report on:

PRODUCTION & QUALITY CONTROL OF BISCUITS

at

NEW OLYMPIA BISCUIT FACTORY (PVT) LTD.

Submitted to:

Prof. Dr. Md. Bellal Hossain Head of the
Department of Nutrition and Food Engineering
Daffodil International University.

Submitted by:

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Date of submission: 20/12/2018

LETTER OF TRANSMITTAL

Date: 20-12-2018

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

Subject: Submission of an internship report on production and quality control of biscuit.

Dear sir, I am here by submitting my internship report, which is a part of the NFE program curriculum. It is a great achievement to work under your active supervision. This report is based on "Biscuit" in new Olympia biscuit factory (PVT) LTD. at Palashbari, Dendabor, and I stayed for sixty days, under the direct supervision of Mesba Uddin, operation director. This project gave me both academic and practical exposures. First of all, I have gained knowledge about the formulation and sensory evaluation of biscuit. Secondly, the project gave me the opportunity to develop a network with the corporate environment. I shall be highly obliged if you are kind enough to receive this report and provide your valuable judgment. It would be my immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely yours,

.....

Amanat Ullah
Id:153-34-467
Department of Nutrition and Food Engineering,
Daffodil International University.

APPROVAL CERTIFICATION

This is to certify Id: 153-34-467, program B. Sc in Nutrition & Food Engineering Major. Food Engineering is regular student department of Nutrition & Food Engineering (NFE) & Faculty of Allied Health Science, Daffodil International University. He has Successfully completed his Internship program in 80, Palashbari, Dendabor, saver and his prepared this “internship Report” under my direct supervision. He assigned internship topics microbiological test of biscuit. I think that the report is worth of fulfilling the partial requirement of NFE program.

I am pleased to hereby certify that the data and finding presented in the report are the authentic work of Amanat Ullah. I strongly recommended the report presented by Amanat Ullah for further academic recommendations and defense/viva-voice. Amanat Ullah bears a strong moral character and a very pleasant personality. It has indeed a great pleasure working with him. I wish him all success in life.

.....
Prof. Dr. Md. Bellal Hossain
Head
Department Nutrition and Food Engineering (NFE)
Daffodil International University.

ACKNOWLEDGEMENT

First of all, I would like to express my deepest gratitude to the almighty god for his uncountable blessing upon me, that I have able to complete my industrial training in the food industry of New Olympia Biscuit factory (PVT) Ltd. The almighty for his mercy extended to me to this study report, manage is everything soundly. We are the student of Nutrition & Food Engineering Industrial training is a part of year B. Sc (Hons) syllabus. For the fulfilled of any kind of theoretical knowledge. So Industry attachment is essential. Considering this matter our respectable and learned teachers included this tour into syllabus. As a student of Nutrition & Food Engineering, we study various food product manufacturing process and quality control.

I greatly acknowledge my deepest gratitude to my honorable Professor Dr. Md. Bellal Hossain Head of the Department of Nutrition & Food Engineering; we want to express our highest compliment toward the authorities of New Olympia Biscuit Factory PVT Ltd. To permit us for Industrial training in their biscuit plant. We are cordially acknowledged specially to Director Operation Mesbah Uddin, Md. Mahamud for their guidance. The co-operation & geniality we have found the generous employee of the plant will be evergreen memories in our life. Finally, but not least, we own thanks to our family members for their inspiration & support. We also pay thanks to our group members for their co –operation to complete the industry training.

EXECUTIVE SUMMARY

This report is prepared on the basis of my two-month practical experience at the company of New Olympia Biscuit PVT Ltd, Saver. This internship program helped me to learn about where foods are produce, processed, preserved, and ready for marketing and distribution. Food industry is closely related with the food technology. Food technology is applicable form of food science. Food industry is composed of various components. Some of which are raw material production, manufacturing, distribution, marketing etc. the total food processing system including the agriculture sector, food processing and marketing function and supporting industrial activities generates about 20% of the gross national product. A large number of workers work in food industry, who is involved in the production, processing of raw materials, and in the packaging and marketing of finished products. It has been helping the biscuit sector by extending testing and analytical support to food industries on regular basis. New Olympia Biscuit Factory PVT Ltd, food industry is a dynamic and leading private company countrywide. This report has been presented based on my observation and experience gathered from the company. The company has many division and department but I only got the opportunity to work in processing and quality control department.

The report mentions about the high energy biscuit product qualities and processing knowledge.

Table of Content

Details	Page No
Letter of Transmittal	ii
Approval Certification	iii
Acknowledgement	iv
Executive Summary	v
Table of Content	vi-vii
CHAPTER: 01	1
1.1. Introduction	1-2
1.2. Objective of the report	3
CHAPTER: 02	4
2.0. Company profile	4
2.1. Factory Organogram	5
2.2. products name of new Olympia biscuit (PVT) LTD.	6-7
CHAPTER: 03	8
3.1. Process line of High Energy biscuits production	8
3.2. Screening(CCP-1)	9
3.3. Mixing	10-11
3.4. Biscuit forming	12-14
3.5. Baking (CCP2)	14-15
3.6. Cooling	15-17
3.7. Metal Detector (CCP 3)	18

CHAPTER:04	19
4.1. Packaging	19-22
4.2. Storage	23
2.0. Packaging materials storage:	24
CHAPTER:05	25
5.1. WFP activities	25-26
5.2. WFP goals	26
5.3. Objective of the WFP nutrition improvement system	27-29
5.5. Conclusion	30

CHAPTER:01

1.1. INTRODUCTION

Food industry is one kind of industry or institution where foods are produced, processed preserved, and ready for marketing and distribution. Food industries are rapidly growing industries all over the world.

Food is composed of various components, some of which are raw material production, manufacturing, distribution, marketing etc. The food industry is highly planned organization in our country. In well-developed food industry, planning, scheduling of all phases to eliminate or at least minimize both shortages and surpluses among farmer, manufacture and distributor.

The food industry is very large and if production, manufacturing, marketing, restaurants, institutions are combined; it is the largest industrial enterprise in a country.

In Bangladesh, the condition of food industry is developing day by day. I think this occurs due to the pressure of competition between various foods industries as improving the better quality of product and maintaining the better hygienic condition in the food industry. The increasing demand for food industrial food product, inspire the industrial list to make a food industry.

High Energy Biscuits (HEB) have been produced from fresh and good quality, free from foreign equipment, substances hazardous to health, excessive moisture, insect damage and fungal contamination and shall comply with all relevant nation food laws and standards.

High Energy Biscuits (HEB) is wheat biscuits containing high-protein cereals and vegetable fat. Because of their high energy-to-weight ratio they are procured by the World Food Programmed, the food aid branch of the United Nations, for feeding disaster victims worldwide.

HEBs have been provided to a variety of geographical locations. For example, HEBs have been provided to Georgia after the 2008 South Ossetia war.

HEBs were also airlifted to Kenya, and more recently distributed in aid in the 2010 Haiti earthquake, as well as 80 tons of high energy biscuits have been delivered to the Tunisian border in response to the Libyan crisis. HEBs are usually packaged in cardboard boxes weighting 10 kg each.

WFP High Energy Biscuits (HEB) is biscuits (small baked bread or cakes) that are supplemented with a premix of vitamins and minerals. This ready to eat food participates to the covering of

urgent needs in the acute phase of an emergency situation during which population is not able to cook due to a lack of access to basic facilities (clean water, cooking equipment...). Their use is also extended to a complement food ration (use as snacks) to provide vitamins and minerals in regions/population where diet is subjected to nutritional deficiencies. HEB can be used also to prevent micronutrients deficiency of young children and school age children.

High energy biscuits are light, nutritious and easy to transport. That's why WFP often distributes them in the early days of an emergency.

They contain vitamins, minerals and other micronutrients along with a dose of energy, which helps give disaster victims the strength they need to steer through the crisis. In addition, because they require no cooking, they provide an immediate solution to food needs.

Since, I am the students of „Nutritional and Food Engineering “various course such as food preservation, food processing, quality control of foods included in my syllabus, have to read. These courses are closely related to food industry. So for the improvement of knowledge about food preservation, food processing, quality control of food, food industry is very much important. On the other hand, for the fulfillment of theoretical know ledge about the above course, practical knowledge is essential.

I think visiting industry help us to improve the theoretical knowledge. On the other hand, it is said that, are achieve knowledge how the raw material and finish product are preserved, how the finish product are packed, how the quality control of finished product are maintained. For this theoretical knowledge become easily to us

1.2. Objective of the report:

There are two objectives of this study

- General Objective.
- Specific Objective.

General Objective:

- To gather the practical knowledge on food processing, manufacturing, preservation and production of convenience food items from raw materials.

Specific Objectives:

More specifically, this study entails the following aspects:

- To have a practical experience on, Food Processing, Quality Control, Packaging and Storage.
- To know the working environment of factory
- To achieve a practical experience on processing, Quality Control, packaging, storage and hygiene of New Olympia Biscuits Factory (Pvt.) Ltd.
- To observe the monitoring of International standard from raw materials to storage according to ISO 22000:2005 in New Olympia Biscuits Factory (Pvt.) Ltd.
- To assess the quality assurance system according to HACCP in quality control, hygiene, safety and sanitation in New Olympia Biscuits Factory (Pvt.) Ltd.
- To observe the monitoring of quality management system (QMS), Bangladesh standard & testing institute (BSTI), good manufacturing practices (GMP), HALAL practices in New Olympia Biscuits Factory (Pvt.) Ltd.

CHAPTER: 02

(COMPANY PROFILE)

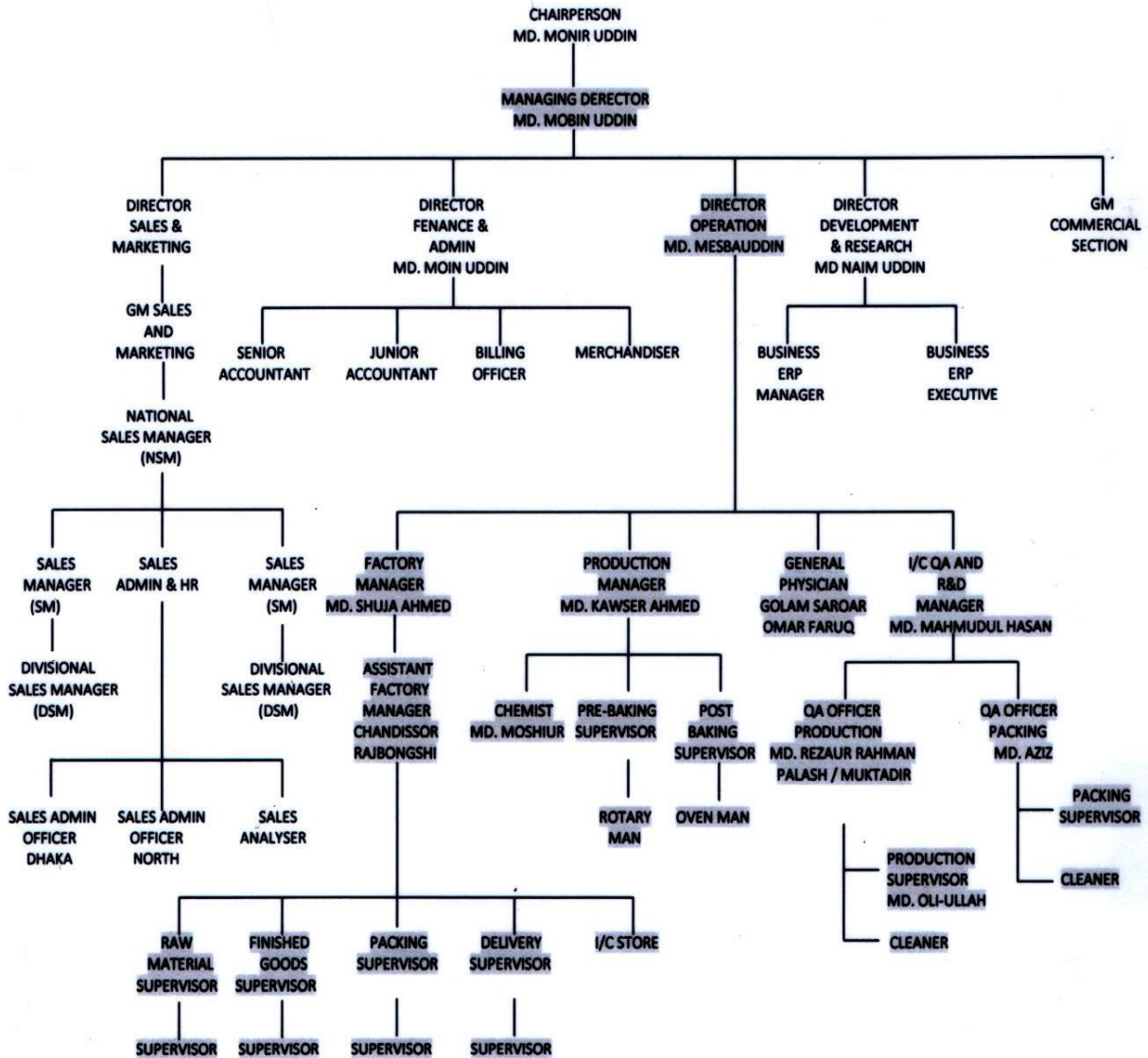
2.0. Company profile

- **NAME:** New Olympia Biscuits Factory (Pvt.) LTD.
- **Year of Establishment:** 1995
- **Location:** Polashbari, Dandorbar, saver.
- **Main product:** HEB Biscuit.
- **Total Employee:** 300 persons.
- **Total area:** 3 acres.
- **Production:** 30 metric Tons/day.
- **Certified by:** ISO 22000:2005, BSTI, HACCP, And HALAL.

2.1. Factory Organogram

NEW OLYMPIA BISCUIT FACTORY (PVT.) LTD.
DENDABOR, POLASH BARI, SAVAR, DHAKA.

FACTORY ORGANOGRAM



2.2. products name of new Olympia biscuit (PVT) LTD.

(Biscuit unit)

1. WEP-High Energy Biscuit.

2. Nutritional value :100gm dry product

- Energy 450kcal minimum.
- Protein 10-15g (N*6.25).
- Fat 15g minimum.
- Sugar 10-15g.
- Fiber 2.3gm minimum.
- Vitamins & minerals 1gm.

2.4. WFP Specification

1. Flour	75%
2.Sugar	14%
3.Palm Oil	13%
4.Soya	6.50%
4.Premix	1.00%

Discussion of high energy biscuits (HEB)

High energy biscuits (HEB) shall be manufactured from fresh and good quality, free from foreign materials, substances hazardous to health, excessive moisture, insect damage and fungal contamination and shall comply with all relevant national food laws and standards.

Some individual characteristics of WFP high energy biscuits:

The biscuits shall be invigorating with vitamins and minerals as prescribed by WFP, the biscuit shall be crispy with biscuit color, good taste and free from any small or filth. The conjecture measurement of the biscuits shall be round with diameter of approx. 06cm, and rectangular shape with diameter of approx. with a clear display of the letters (WFP) in the center or with the full WFP logo with the letters (WFP) on the appropriate place. 11 piece rectangular shape biscuits make 75gm, carefully wrapped and machine sealed in aluminum foil pack with 0.04mm thickness and attractive printing. 100 packs each on containing 75gm biscuits will be packed in each carton of exact specification given by WFP. The shelf life of the biscuit will be at least one

year from the date of the manufacture when stored dry at ambient temperature prevalent in Bangladesh. Maximum moisture content of the biscuits will not exceed 3.5% at the time of delivery. Each packed of 75gm of biscuits will meet about 75% of the recommended daily allowance (RDA) of vitamins and minerals of a child.

2.5. Raw materials of HEB:

Raw materials must be stored under dry, ventilated and hygienic conditions. Only safe insecticides (i.e. phosphate) may be used for fumigation control. Where needed, fumigation must be performed by certified operators

Requirements for the raw materials are:

- Wheat flour.
- Soy flour/soy protein.
- Sodium Bi-carbonate.
- Ammonium Bi-Carbonate.
- Sugar syrup.
- Sodium Chloride.
- Water.
- Vegetable Fat.
- Vitamins and minerals: Complete premixes must be purchased from a WFP approved supplier. The composition of premix is presented in product specification. Providers of WFP's micronutrient premixes are DSM, Fortieth, Nicholas Primal and Hexagon Nutrition or their approved merchant (locations of providers are in add). Micronutrient premixes must be conveyed to the processor of HEB with a total Certificate of Analysis and also with a Proof of procurement of premixes. The two archives must be given different reports for installment. Premixes must be put away in a dry, cool and clean place where the temperature is a greatest of 25° C.

CHAPTER: 03

(PRODUCTION)

3.1. Process line of High Energy biscuits production

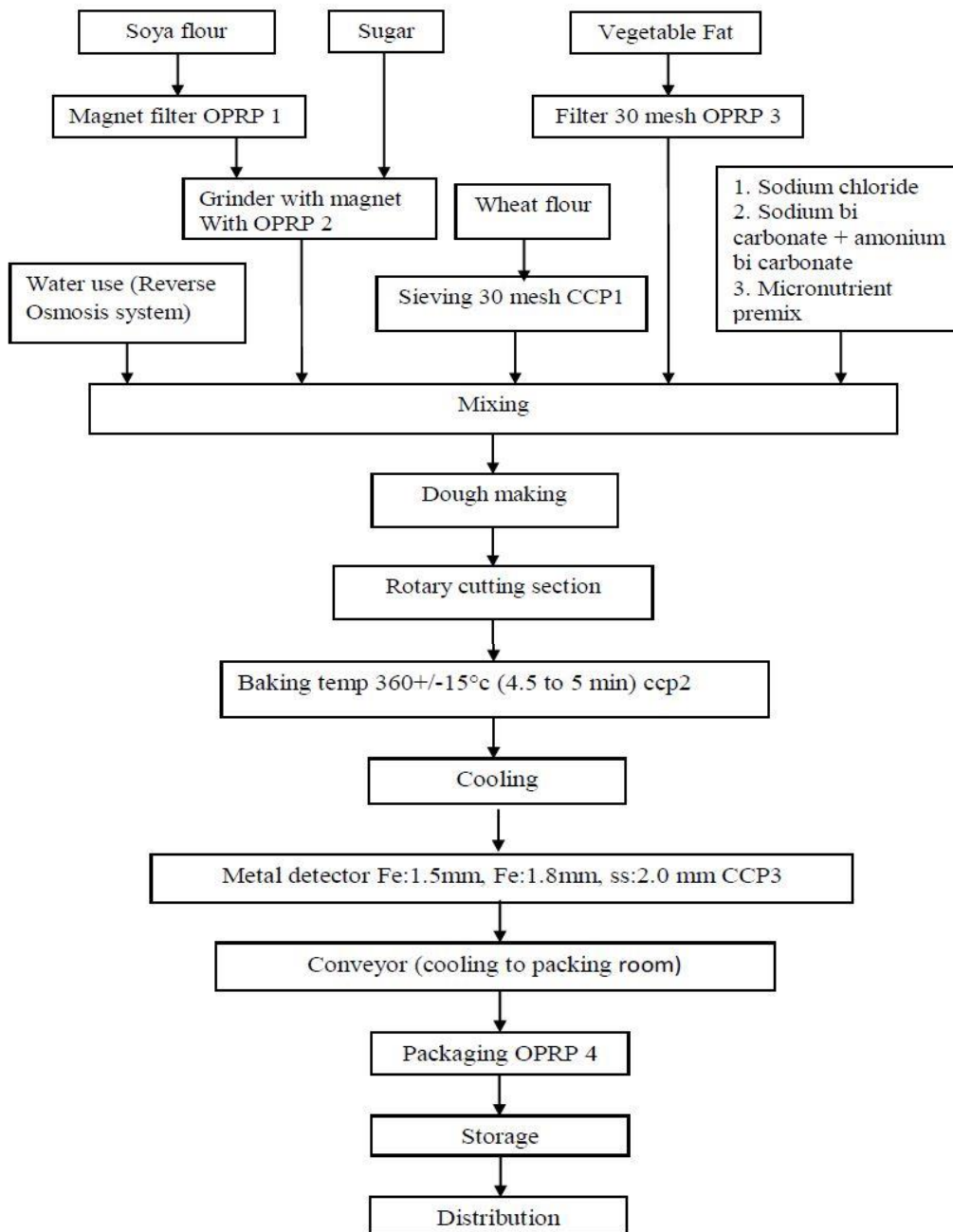


Figure: Flow diagram of High Energy Biscuits

3.2. Screening(CCP-1)

Screening is the first part of the biscuit production. In this section all types of dry components are almost remove. There are two screening machine in the new Olympia biscuit company. The mesh number of sieve is 30 in every square inch. Generally wheat flour and soya flour are sieving on the industry. This part is identified as CCP- 1.

The main focus on screening are followed on these specific sectors:

- Dry metal powders (gold, copper, titanium and aluminum, among others);
- Dry mining (alluvial applications and primary hard rock applications);
- Dry aggregates (sand, limestone, dolomite, quartz, basalt, bauxite);
- Dry industrial (fertilizers, glass, aluminum silicate, barb tine, guar, plastic granules, polyethylene catalysts, PVC powder, dry food).



Figure: screening of wheat flour

3.3. Mixing

Blending is vital in biscuit generation, being the first of the four noteworthy creation steps where every one of the fixings are splendidly mixed to enable the pastry specialist to deliver the ideal roll.

Biscuits are a standout amongst the most mainstream snacks the world over and loved and appreciated by individuals of all age gatherings. What a great many people appreciate about a bread is that it tends to be taken with anything from some tea or espresso to drain or just snacked alone. They can be dunked or eaten in its present condition.

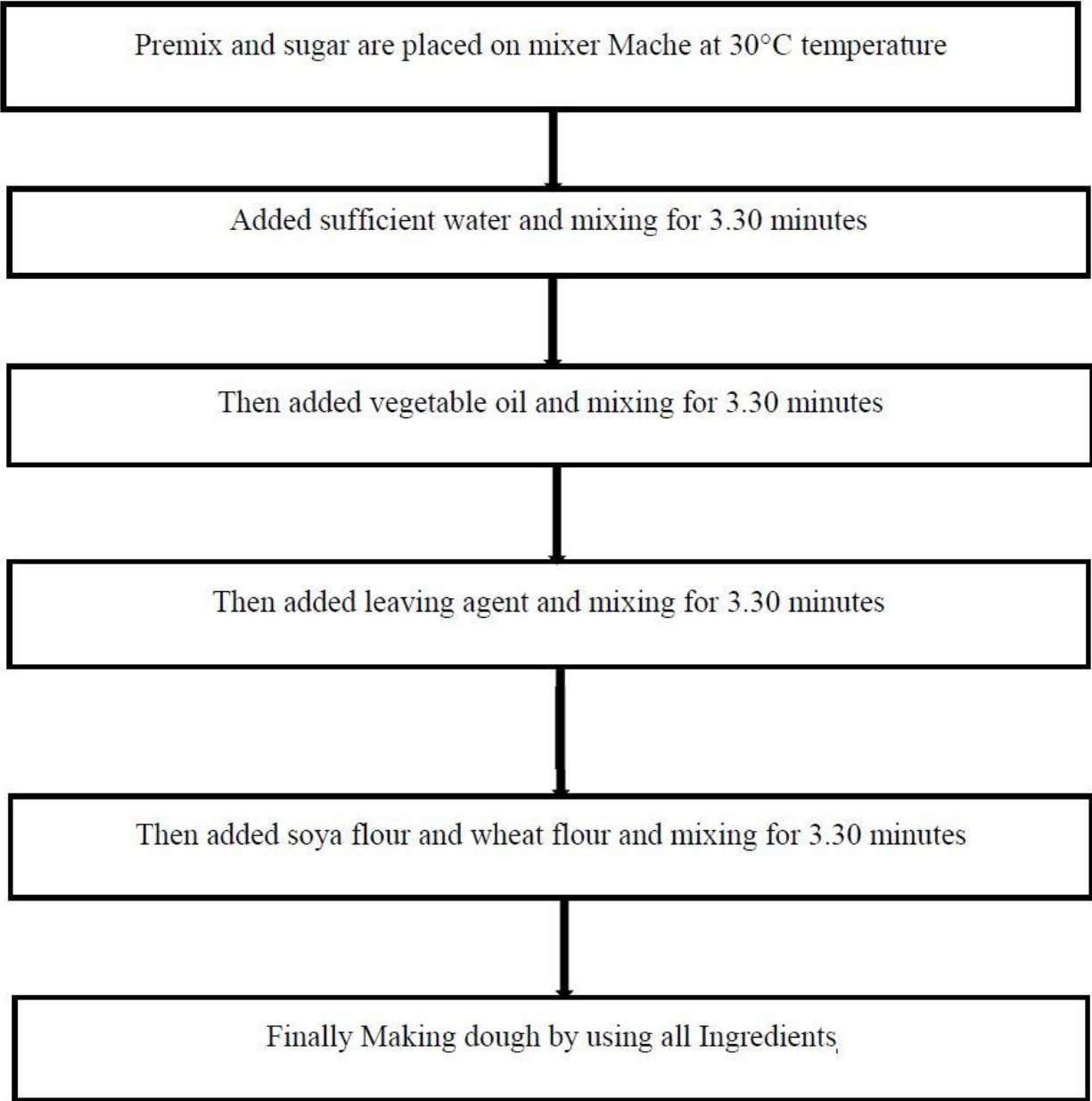
Biscuits come in numerous shapes and structures however every one, basically, needs the correct fixings blended splendidly to deliver the ideal finished result. There are principally four phases to making the scone in a plant – blending, shaping, preparing and cooling.

In the blending stage, flour, fat, sugar, water and different fixings are combined in the correct extent in expansive blenders to frame the batter. The blending time is cautiously figured out how to accomplish uniform appropriation of fixings and the correct mixture consistency.



Figure: Dough preparation

The mixing processes of new Olympia biscuit company that they followed are listed below by a flow chart:



3.4. Biscuit forming

This is a very important part of biscuit processing. After making dough it is placed on rotary machine. It has three parts to forming biscuit such as sheeting, gauging and finally cutting. In Olympia company, rotary machine releases 20 to 22 biscuits in every minutes that depends on machine speeds.

The total processes of biscuit forming are given below:

Sheeting

The sheeted compacts and checks the batter mass into a sheet that is of even thickness and at the full width of the plant. It is critical to guarantee that there are no noteworthy gaps and that the edges are not battered but rather smooth. Much of the time, the sheeted will likewise take into account the consolidation of mixture that is come back to the shaper, alluded to as scrap, with virgin or crisp batter got from the blender. The batter is packed inside the sheeted and worked over in this manner considering the evacuation of air. Amid this procedure, certain anxieties will likewise be unavoidably developed in the gluten structure. The new mixture sheet will at that point go into at least one lots of measure move sets, which are intended to lessen the thickness that is required for the batter cutting. The batter is commonly carried on transports between the sheeted and every one of the measure rolls. In specific cases, when the thickness of the mixture has been decreased, the sheet is then collapsed to frame numerous overlays before it is additionally checked into the last thickness that is wanted. It is critical to take note of that as the mixture sheet ends up more slender as it advances to the shaper from the sheeted, it along these lines turns out to be longer. All things considered, each measure roll and consequent transport will run quicker than the ones previously it.

Gauging

The thickness of the mixture step by step diminished by sets of substantial steel move to the dimension that is wanted for cutting. There are ordinarily 2-3 sets of rolls, despite the fact that a solitary combine might be utilized for short batter, while at least three for example that require exceptionally delicate decrease. The standard guideline for thickness decrease at each measure roll is 2:1, despite the fact that proportions of up to 4:1 are normally utilized also. Unmistakably, the higher the proportion, the more pressure and work that will be put into the batter. Much of the time the combine of measure rolls are vertically mounted, one over the other. To change the hole, you would need to move one roll, once in a while the lower and different occasions the upper one. All measure rolls have instruments that demonstrate the hole setting. This takes into consideration the changing of the machine. So the account of settings with better legitimacy. Measures will regularly not relate well with the hole, in spite of the fact that this an extremely customary instance of designing support for alignment. While the mixture rises up out of the check move, it is commonly of a thickness that is marginally more prominent than the hole that it

came through. This is because of the batter's enlivened properties. And because of the way that some expulsion happens through the touch, in likewise with rolling.

Cutting

The slicing stage is intended to create the diagram of the ideal size shape for your scones. It is in this way imperative to guarantee that the bit of mixture keep up to the slicing web and not to the shaper. Be that as it may, this training ought not be too saver generally the dough puncher will encounter issues as they endeavor to exchange the pieces, without contortion, onto the band or even the following transport. Cutters are utilized to stamp out one or different lines of bread pieces at a go. The hardware utilized is ordinarily substantial and joins a swinging instrument. Along these lines, the batter sheet can move at a consistent speed not change. While the shaper, drops, visit with the mixture, at that point rises and swings return be before its drops by and by.



Figure: cutting of biscuit

Changes might be made to pursue for light or heavier cutting with the falling of the square. Where ordinary shaper is required, the shaper drops onto the mixture and the ejector plate is then pushed back. As the shaper lifts away, the ejector pushes the mixture, accordingly guaranteeing that it stays on the slicing web without adhering to the shaper. some mixture sheet thickening may occur before cutting as the batter unwinds. In any case, take care to stay away from extreme cutting power by the essential cutting folds that could uproot the batter into the piece subsequently creating lighter mixture

The slicing machine alludes to the whole machine arrangement including the sheeted, shaper and organizer which at long last places the bits of mixture into the broiler band.

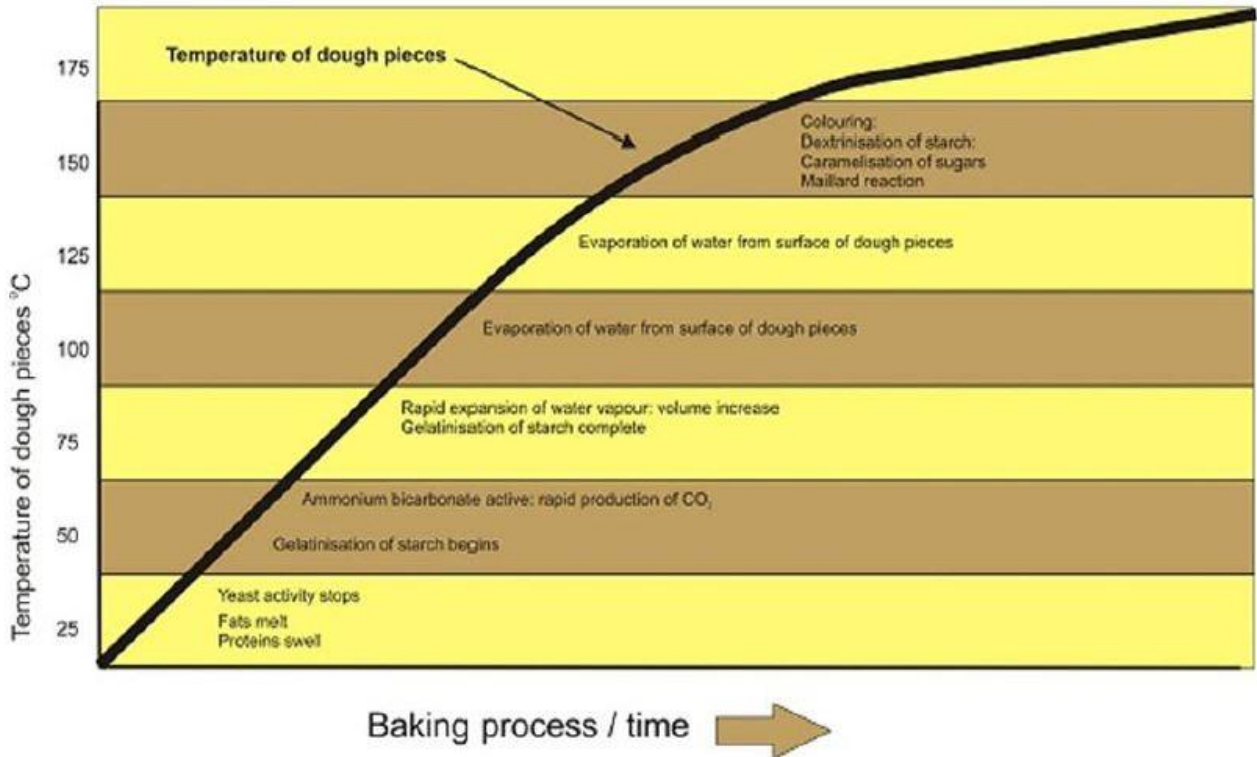
3.5. Baking (CCP2)

After forming biscuits, it is placed on the baking section and there causes some physical and chemicals changes of biscuits. This changes are highly depending on the temperature, humidity of the baking chamber and moisture content of dough. As we have looked the water in the dough plays a important role in acquiring the biscuits and shape.

In new Olympia roll organization, they manage 390°C to 220°C temperature for 2 to 5 minutes to prepare scones. The gluten can expend up to 200% of its load in water. As the mixture temperature builds, the gluten web swells and winds up reinforced and state of gas and air rises in the batter frames, causing an expansion in volume of the mixture piece. The swelling of the proteins increments from 30c to around 50c. Nonetheless, denaturation of the proteins happens at temperature over 50c, when the long chains of atoms are broken. As more warmth is connected, gluten coagulation occurs above 70c, at this temperature a portion of the moistness is discharged from the gluten.

The air rises in the mixture are immersed with water and these broaden quickly as the temperature much. The expansion in volume is 3% at 50c up to half at 95c. This development makes a proper increment in volume of the mixture cut amid heating.

All together for the bread rolls to achieve a top volume, it is fundamental that the surface of the mixture piece isn't dried too quickly, making it unbending and moving the development of the batter piece. The mixture piece surface must stay soggy and moldable for whatever length of time that conceivable. As the mixture piece, at encompassing temperature, enter the broiler, some dampness will focus on their surfaces. This not just keeps the surface of the mixture pieces damp, however the buildup discharges inert warmth, which help in rising the temperature of the batter. It is fundamental to control a muggy climate in the first zone(s) of the broiler and at times infusing steam into the preparing chamber is additionally useful.



The physical and substance contrast noted above which from the surface and state of the bread occur in the main portion of the stove. They require temperature, as well as time also. In some investigation it has been appeared there is a dimension to the speed of the temperature increment, which whenever surpassed will result in a fall in nature of the roll.

Humidity removal

At the point when the gluten has been consummately hydrated and the organization of the roll is framed, the staying free water must be vanished. This water is dissipated from the surface of the batter pieces. This will guarantee in a general sense at 100c for unadulterated water, however at higher temperatures (up to 130c) when the water is held in arrangement, for example, in a sugar arrangement. At temperatures over 100c, the usage of warmth will dependably result in dampness loos from the surface of the batter pieces, even in an

precedent in a sugar arrangement. At temperatures over 100°C, the use of warmth will dependably result in dampness misfortune from the surface of the batter pieces, even in a broiler climate which is soaked with water vapor. This loss of dampness from the batter cost is reliant on the temperature, strategy for warmth exchanges and the moistness of the broiler

3.6. Cooling

Before exchanging naturally heated scones from the over to the wrapping machines, affirm that item is cool enough to deal with. Cooling is similarly critical for scones rice in sugar, as these

will in general be delicate and plastic while leaving the broiler, and are just competent to set inflexible once they have chilled off. Heating specialists discover that if bread rolls are stuffed excessively hot, while will wind up perspiring in the pack. Cooling is imperative in guaranteeing a huge harm of dampness in the item.

Process:

useful estimated bunches available to be purchased, and additionally supporting them from smear, loss of dampness take-up from the climate. Transportation from the broiler goodbye to the point of bundling is ordinarily of After preparing rolls will go immediately to bundle. This enables them to be examined into a noteworthy space which includes the utilization of different and long transports. As a rule, diverse kinds of treats and bread rolls that are delivered crisply ready from the stove will be pressed utilizing distinctive bundling machines. Through the presentation of preoccupation and bended transports, the rolls might be taken to the suitable position. It is along these lines unavoidable that the bread rolls will wind up cooling amid this transportation stage. The standard guideline concerning cooling time on open transports ranges from 50—200% of the heating time on. For certain situation, bread rolls might be quickly stacked after expulsion from the broiler band. From there on, they might be cooled on wire transports which have fans blowing air from roar or into the constrained convection burrows with or without refrigerating the item. Appropriate treatment of prepared rolls is vital in order to affirm that the item isn't presented to harm because of dropping or combining.



Figure: Cooling Conveyor

Long cooling transports will commonly include evacuate and turnover between the active of the stove and the last goal of the item. With the expanded motorization of treat and roll creation, it has turned out to be progressively imperative to keep up the indistinguishable introduction of the item on the broiler band to the taking care of machine before wrapping happens. The loaded with the cooling transport is, the much the quantity of exchange focuses, and the more mix up bread

situating gets. Naturally heated bread rolls are pushed by sequential lines of item into the primary cooling transport and they wind up declining onto a cross transport.

Cooling conveyor & Stacker Machine:

The cooling transport is developed out of a measured structure and associated together for the arrangement of the ideal length. Bolstered side channels are normally creating from thick sheet. Inactive rollers are separated a section on passing on course and return bearing appropriately. The inert rollers are ordinarily mounted on profound furrow metal balls with a crushing completion and are hard chrome covered to advance sterile creation conditions. To limit the droppings of oil from the material at the time generation of high fat bread rolls, every one of the points in the unit are supplanted with inert rollers. Drive blast are incorporated and projections are made on the drum surfaces for motivations behind limiting slip, or secured with erosion grasp elastic tape

The cooling transport is built out of a particular structure and associated together for the arrangement of the ideal length. Upheld side channels are normally manufactured from thick sheet. Inert rollers are separated on passing on course and return heading likewise. The inactive rollers are commonly mounted on profound furrow metal rollers with a granulating complete and are hard chrome covered to advance sterile creation conditions. To limit the droppings of oil from the fabric amid the creation of high fat scones, every one of the points in the unit are supplanted with inert rollers. Drive drums are incorporated and projections are made on the drum surfaces for reasons for limiting slip, or secured with contact grasp elastic tape. There is likewise following and manual tensioning accessible in the unit. To stack the oil showered item, utilize the feeder table as it won't require any all the more voyaging following the oil splashing process. The oil shower machine is used to splash fine palatable oil onto the best and base of hot scones rising up out of the broiler before being exchanged to the cooling transport. The bread that rises up out of the stumbling transport is coordinated onto the cooling transport for motivations behind moving warmth in the scone into the environment as it passed on it. The suggested aggregate travel of cooling transports is 1.5 time the length of the stove.

3.7. Metal Detector (CCP 3)

Metal finders are being utilized in Biscuit Industries to distinguish metal tainting and give sans metal roll for their clients.

The Metal Detector is introduced on a transport line framework with an ONLINE dismissal unit. At the point when any metal tainting is gone through the metal identifier unit, the equivalent is recognized and declared by the framework.

On discovery of metal tainting:

A) The item can be dismissed by a programmed reject component which will be worked by pneumatically.

B) The transport engine can be interlocked so that so the belt will stop consequently on identification. The metal indicator and the transport instrument are completely manufactured in Stainless Steel material with smooth dull complete which is broadly acknowledged by all sustenance enterprises.

Metal detection range in Olympia industry:

- Fe>1.5 mm
- NFE>1.8 mm
- SS>2 mm



Figure: metal detector conveyor

CHAPTER:04

(PACKAGING & STORAGE)

4.1. Packaging

Objective of Packaging:

There are three destinations that ought to be fulfilled by the biscuit packaging process:

- Every parcel of biscuit ought to preferably be actually at the proclaimed weight.
- what's more, each pack ought to contain a similar number of biscuit.
- The length of the biscuit pack ought to be invariant.

Important Functions of Labeling:

- **Describe the Product and Specify its Contents:** A mark gives finish data with respect to the item. It for the most part incorporates elements of the item, its utilization, and alert being used, considerations to be taken while utilizing it, date of assembling, group number, and so forth.
- **Identification of the Product or Brand:** It is simpler to recognize a specific item among numerous with the assistance of naming. For instance, you as a purchaser need to choose HEB Biscuit. The assignment of finding the ideal roll from a pile of different marked cleansers ends up simpler with the assistance of naming.
- **Grading of Product:** At the point when an item has distinctive characteristics, marking discovers which pack contains what sort of value. For instance, Hindustan Unilever Ltd., makes three sorts of tea and to separate each kind of tea, the organization utilizes Green, Red and Yellow shaded marks
- **Help in Promotion of Products:** The fourth capacity of naming is to advance deals. In some cases a customer inspires urged to purchase an item essentially because of alluring name. These days naming is utilized as a compelling deals advancing apparatus.
- **Providing information required by Law:** Another imperative capacity performed by naming is to give statutory cautioning required by law. To put „smoking is harmful to health“ on the bundle of cigarette and „Chewing Tobacco is Injurious to Health“ on the bundle of Pan Masala are the instances of statutory cautioning? Correspondingly, if there should arise an occurrence of perilous or noxious items, fitting statutory cautioning should be put on the mark



Figure: Wrapping Paper

Biscuit packaging should include the following information:

- Production date (month/year)
- Best before date (month/year)
- Nutritional information per 100 g
- This product contains no lard
- Not for individual sale
- "World Food Programmed + WFP logo "

MARKING:

- Cartons shall be marked at seller's expense with the following information:
- In letters measuring 1.0 to 1.5 cm on the cartons:
- Net weight
- Month and year of production
- Full name or code of the production enterprise

- Ingredients, nutritional information
- WFP logo (in letters of 5 cm)
- 100 gram or 250 grams' individual packages to be marked with the following information:
- World Food Programmed + WFP logo + donor (to be advised later)
- Nutrition information: Calories, minerals, vitamins per 100g of product.
- “This product contains no lard”
- “Not for individual sale”
- Month and year of production and best before date.

Packaging materials:

- Wrapper (foil)
- Gum tape
- Cartoon
- Paper board
- Pouch
- Laminates or multipliers in which paper, plastic and foil are combined

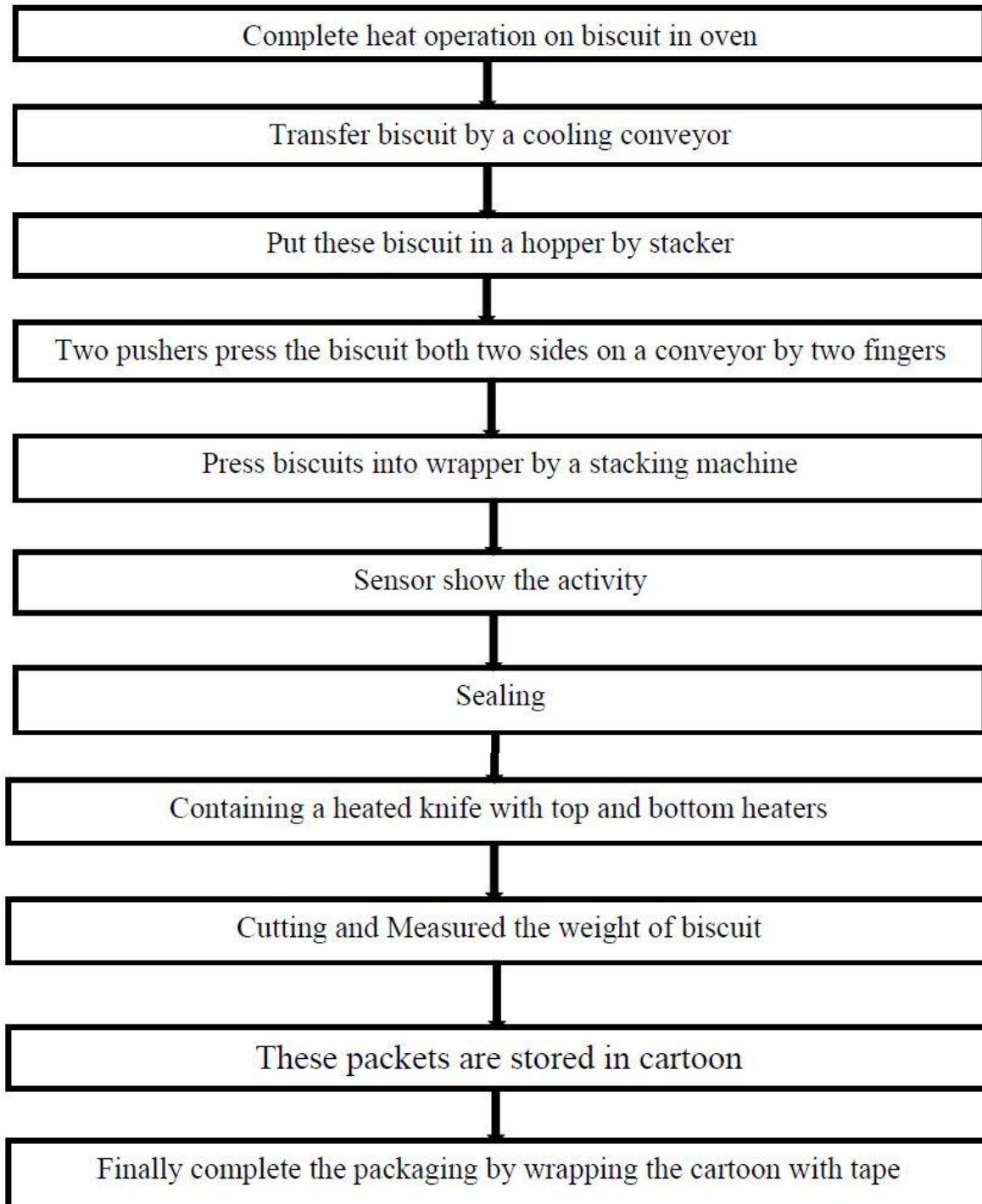
Process of using machine to complete packaging in New Olympia Biscuits Factory (PVT.) Ltd:

There are 3 khosla machines in Olympia industry. They are all categorized by single row on edge packaging machine (Fin seal 11 E) and multi row family pack machine (I pack 21 FP).

These machines Contain:

- Electronic Photo cell unit with sinning head for registration.
- Provide automatic in feed conveyor.
- Sealing roller, sealing jaws, cutter heater.
- Sensor equipment, innovator, proxomedic switch which control the balance of time of wrapping paper attached on biscuit. Khosla machines are extraordinarily intended for bundling roll nervous adaptable in feed simple change gusseted and seals. it is anything but difficult to change for various pack sizes. These machines likewise have a control framework that can naturally change and address the eye check. These are structured with irregular fixing strategy to guarantee to a great degree secure fixing result. The vitality effective pressing machine highlights conservative structure, stable exhibitions and simple and helpful activity. Olympia industry is occupied with giving roll stacking machine, scone wrapping machine, edge pressing machine, single column anxious pressing machine and programmed stacking machine.

Flow chart of packaging section are given below:



4.2. Storage

Storage meaning is to store something. But in food industry raw materials, packaging materials, and finished products are usually store. In New Olympia Biscuits Factory (pvt.) Ltd. (Biscuit) storage is done in three categories.

1. **Raw materials storage:**

Various types of raw materials are used for biscuits production in New Olympia Biscuits Factory (PVT.) ltd.

These are listed in below:

- Wheat flour
- Sugar
- Vegetable oils and fats
- Baking powder
- Salt
- Ammonium soda
- Ammonium bi-carbonate
- Sodium bi-carbonate
- Lipid glucose
- Invert sugar
- Soy flour/soy protein



Figure: Raw materials storage

2.0. Packaging materials storage:

New Olympia Biscuits Factory, three types of packaging materials are generally used. These materials are stored at room temperature. These are-

2.1. Primary packaging materials

- Wrapping paper
- Tray
- Gum tape

2.2. Secondary packaging materials:

- Wrapper

2.3. Tertiary packaging materials

- Carton

2. Finished products storage

Biscuits are stored in air cooler and humidity maintained in New Olympia Biscuits Factory (PVT) Ltd. o WFP High energy biscuits

Storage condition:

Bread rolls being exceptionally hygroscopic gain dampness amid capacity before being stuffed and accordingly turned out to be spongy, rubbery and lose their freshness, claim and taste. This likewise decreases the time span of usability of the item significantly. Relative stickiness in the capacity territory (Temporary stockpiling before bundling) in Olympia organization is kept up at $30\pm 5\%$ at 28°C (82°F) to conquer the issue of dampness pickup or dampness recover.



Figure: Storage room

CHAPTER:05

(STANDARDS)

5.1. WFP activities

- **Improving maternal and child nutrition**

The software engineer bolsters a sum of 42,809 individuals, advancing the dietary status of undernourished youngsters under two, pregnant and bosom encouraging ladies and juvenile young ladies through the arrangement of invigorated mixed sustenances and nourishment instruction. The action is joined by conduct change instruction to enhance nourishment and cleanliness rehearses. The aim of WFP's nutrition strategy in Bangladesh is to support the Government in breaking the intergenerational cycle of under nutrition by giving priority to a child's first 1000 days of life. The Renewed Efforts against Child Hunger and under nutrition (REACH) and Scaling up Nutrition (SUN) initiatives provide the principal coordination mechanisms.

- **Enhancing resilience to disasters and the effects of climate change**

The programmer currently supports over 217,000 ultra-poor men and women through a number of schemes. The Enhancing Resilience programmer aims to strengthen the resilience of vulnerable households to disasters. It combines food and cash for work projects to build disaster resilience infrastructure, such as homestead protection and embankments, and improve disaster preparedness, response and recovery capacities. As part of this activity, WFP also responds to small and medium-scale natural disasters. The majority of participants are ultra-poor women, because they face additional barriers in accessing income-generating opportunities and are more vulnerable than men to the consequences of natural disasters.

- **School feeding**

The programmer supports 1.2 million primary school age children in food-insecure areas.

WFP distributes fortified high-energy biscuits to rural and urban pre-primary and primary schools in areas of high poverty to provide an additional incentive for parents to keep children in school. The programmer works to improve primary school enrolment, attendance and reduce dropout in selected food insecure areas and address micronutrient deficiencies and hunger among primary school children. This is complemented with a learning package to children, parents and other community members on vegetable

gardening, health, nutrition and hygiene. Children are also de-wormed and WFP promotes women's leadership in the School Management Committees.

- **Protracted Relief and Recovery Operation Assistance to the Refugees from Myanmar (PRRO)**

The programmer provides assistance to 31,000 refugees in two refugee camps in Coax's Bazaar. WFP's activity expects to support the dietary status and nourishment security of the outcast populace, and enhance the host populace's acknowledgment of displaced people. Individuals are at present helped through four fundamental exercises: general nourishment appropriation, advantageous encouraging, school bolstering and sustenance for preparing.

- **Partnering with the Government to reform safety nets**

- In 2010, WFP started to put a more noteworthy accentuation on fortifying the limit of the Government to enhance the adequacy and effectiveness of its wellbeing net software engineers through preparing workshops and promotion. WFP is straightforwardly engaged with helping the Government to reinforce its Vulnerable Group Development developer and in the starting of its School Feeding software engineer. WFP has been executing the VGD software engineer together with the Government since the 1970s. In the course of recent years, WFP's job has step by step changed from that of developer implementer to frameworks strengthener.

5.2. WFP goals

WFP will work with partners to help countries bring under nutrition below critical levels and break the intergenerational cycle of hunger. WFP will achieve this by focusing on the following goals:

WFP's nourishment help developers will furnish focused on recipients with the most fitting sustenance based nourishment intercessions customized to their particular needs.

All nation executives and developer officers will be able to break down nourishment issues and will work with governments and different accomplices to anticipate and address under sustenance utilizing a variety of alternatives including nourishment, vouchers and, at whatever point conceivable, locally reasonable arrangements.

5.3. Objective of the WFP nutrition improvement system

Implement demonstrated sustenance based nourishment intercessions that are sponsored by viability and

- Cost-advantage considers and that meet the individual needs of explicit recipient gatherings.
- Support worldwide and nation level backing and advance arrangements for demonstrated sustenance segments of nourishment intercessions.
- Prioritize and upgrade developer intercessions to counteract and treat under sustenance in youngsters from origination to age 23 months adequately.
- Ensure that sustenance and nourishment items pursue globally concurred quality and security models, experience broad testing and research where required, and are sourced and appropriated as a team with accomplices.
- Encourage generation, handling and buy of nearby nutritious nourishments, while guaranteeing the most astounding sustenance quality and wellbeing benchmarks.
- Enhance nourishment appraisals, focusing on, and micronutrient and mediation hole examination, and reinforce imaginative apparatuses, for example, sustenance vouchers and healthfully improved sustenance items.
- Increase proficient limit in nourishment crosswise over WFP.
- Ensure that the money related structure underpins endeavors to assemble and send assets towards upgraded nourishment programming.
- Advocate for compelling coordination and proper division of work for nation level sustenance programming, with government and primary partners.

5.4. Microbiological Guidelines

- **Total Viable Count (TVC):**

TVC reflects the conditions in which the food was produced, stored or abuse. With experience, this count can be used to predict the self-life or keeping quality of the product. The spoilage of many foods may be imminent when the total viable count reaches 10-100 million per gram of product.

Guidelines:

- TVC < 10,000 cfu/g for fortified biscuits, instant noodles.

- TVC < 10,000 cfu/g for fortified blended foods, whole wheat flour (Atta), flours and dry noodles.
- Hence, such as rice, cereals and spices often contain this organism. This organ Aerobic Plant Count (APC)/ Standard Plate Count (SPC) number of bacteria living at mesophilic temperature (30-37°C)/ Heterotrophic Plant Count (HPC)/ Total Plant Count (TPC) are used interchangeably.

- **Coliforms:**

Coliform bacteria are commonly found in both food and water. They are rod-shaped Gram-negative and non-spore forming and also motile or nonmotile bacteria which can ferment lactose with the production of acid and gas when incubated at 35–37°C. Coli forms can be found everywhere such as aquatic environment, in soil and on vegetation; they are present in large numbers in the feces of warm-blooded animals.

Guidelines:

- TVC < 10 cfu/g for fortified biscuits, instant noodles.
- TVC < 100 cfu/g for fortified blended foods, whole wheat flour (Atta), flours and dry noodles.

- ❖ **Escherichia coli (E. coli)**

E.coli exists in the intestine of animal and human and is an determinative of poor hygiene practice. Some strains e.g. E. coli 157 can cause illness when present at levels as low as 10 per gram of food. These strains would not necessarily be included in traditional E. coli tests. The very low infective dose means that cross contamination between foods is particular hazards.

Guidelines:

- TVC < 3 cfu/g for fortified biscuits, instant noodles.
- TVC < 10 cfu/g for fortified blended foods, whole wheat flour (Atta), flours and dry noodles.
- E. coli can be present in grains if birds and rodents have contaminated the food.

- **Salmonella:**

This organisms accounts for over 50 percent of cell reported cases food poisoning. Symptoms usually develop between 12 and 36 hours after ingestion, causing pain diarrhea, fever and vomiting which can last for six days or more.

Guidelines:

- Salmonella 0 cfu/25 g for all food.
- Salmonella can be present in grains if birds and rodents have contaminated the food.

❖ Yeast and Moulds:

Most of the yeasts are not responsible for food poisoning, but there are some species which are capable of causing food spoilage. They can produce toxins such as mould which produce mycotoxins that can affect man adversely. Mould spore transported through the wind and can easily contaminate raw materials of food factory.

Guidelines:

- Yeast and Mould < 100 cfu/g for fortified biscuits, instant noodles. □ Yeast and Mould < 10,000 cfu/g for fortified blended foods, whole wheat flour (Atta), flours and dry noodles. □ Yeast and mould < 100,000 cfu/g of grains.

- **Bacillus Cereus:**

Bacillus Cereus mostly found in stool and is common in soil nism. It is a spore former and can survive heat processing. Fast growth of vegetative cells occurs at immanent temperature. These cells produce toxins, both in the food ingestion.

Guidelines:

Should be searched for only if a contamination problem is suspected, e.g. suspicious aspect of product.

- Bacillus cereus < 3 cfu/g for fortified biscuits, instant noodles. □ Bacillus cereus < 10 cfu/g for fortified blended foods, whole wheat flour (Atta), flours and dry noodles. □ Bacillus cereus can be present of grains

5.5. Conclusion

Industrial attachment sends me to the expected destiny of practical life. The completion of the 60 days' Industrial attachment in New Olympia biscuit factory (PVT.) Ltd, I have got the impression that factory is one of the most modern export oriented Food industry in Bangladesh. Though it was established only a few years ago, it has earned "very good reputations" for its best performance over many other export oriented Food industries. I have observed the total industrial production process of WFP (HEB). I have also observed the Quality Control, packaging, storage and hygienic practices followed in producing WFP (HEB). Finally, I observed the overall Industry are ensured Clean-In-Place (CIP), Hazard Analysis and Critical Control Points (HACCP), Quality Management System (QMS), International Organization for Standardization (ISO), Bangladesh Standard & Testing Institute (BSTI), Good Manufacturing Practices (GMP), HALAL practices in New Olympia biscuit factory (PVT) Ltd. All practices are genuinely applied for Good production with appropriate quality to deliver nationwide and for export in different countries.