



Daffodil
International
University

**INTERNSHIP REPORT ON PRODUCTION AND QUALITY
ASSURANCE AT NESTLE BANGLADESH LTD**

BY

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Submitted to the Department of Nutrition and Food Engineering in the partial fulfillment
of B.Sc. in Nutrition and Food Engineering

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APPROVAL

This Project titled “**Internship Report on Production and Quality Control of Nestle Bangladesh Ltd**”, submitted by **Fahadul Islam Badsha** to the B.Sc. in Nutrition and Food Engineering program at the Department of Nutrition and Food Engineering, Daffodil International University, meets the established standards in terms of style and content.

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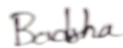
I demonstrate that **Md. Harun-Ar Rashid**, an Assistant professor in the department of NFE at Daffodil International University, obliged as the principal sleuth for this study. I further assert that this project and its apparatuses have not been submitted elsewhere for the purpose of receiving a degree or certificate.

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Executive Summary

The primmest food and beverage corporation in the world is Nestle. In 1966, Nestle began its adventure, and now it ranks among the biggest international corporations in the world. Nestle sources various raw materials from many countries to provide the best quality and flavor.

Nestle always concern about their quality. They follow the zero tolerance on quality control issues. Their quality control officer always responsible about their duties. They check raw material before production as well as inspection of final product. Over the course of 150 years, nestle has improved the lives of people and their families in 191 different countries.

Nestle Bangladesh has offered diverse products and services for all stages of life, helping people take better care of themselves and their families.

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1.2 Objectives

- **Skill Development:** To offer hands-on training and opportunities for students to develop and enhance their skills in a particular field.
- **Professional Experience:** To provide exposure to the real work environment and professional practices, helping interns gain valuable experience.
- **Networking:** To build connections and relationships within the industry, allowing interns to expand their professional network.
- **Career Exploration:** To enable interns to explore potential career paths and industries

CHAPTER 2

2. Products and Production

2.1 Noodles Plant

The production of Maggi noodles involves a intricate process that begins with sourcing the highest quality ingredients from reliable suppliers. These ingredients are carefully selected, and the recipe for the noodles is accurately crafted to ensure the perfect balance of flavors.

The production process includes mixing the ingredients, extruding the dough into noodles, and then drying and packaging them. The noodles are carefully tested at every stage to ensure that they see Nestle's strict quality and safety standards. Nestle takes great care in ensuring that its production processes are environmentally sustainable and socially accountable.

The company has executed several initiatives to reduce its environmental impact, such as reducing water usage and waste production, and using renewable energy sources.

Nestle's promise to quality, safety, and sustainability is reflected in the popularity of Maggi noodles worldwide. The production of Maggi noodles is a testament to Nestle's devotion to delivering products that are not only delightful but also safe, sustainable, and of the highest quality.



Figure 2.1: Maggi Noodles

Process flow diagram of noodles production

Tipping: Tipping is often done to move bulk ingredients, such as flour or sugar, from a storage area to a mixing area for use in the manufacturing process. This is an important step in food manufacturing as it helps to certify the consistent and effectual flow of ingredients throughout the production process.

Load cell: Load cells are an vital component in the production of noodles, and they play a critical role in confirming that the final product meets the required quality standards. A load cell is a type of transducer that is used to measure force or weight, and it is used in various stages of the noodle production process.

In noodle production process, load cells are commonly used in the weighing and mixing of the raw materials. The load cells are fixed in the mixing vessels, where they accurately measure the weight of each ingredient as it is added to the mixture. This ensures that the exact amounts of each ingredient are used in the recipe, which is critical for achieving the desired texture and flavor of the noodles.

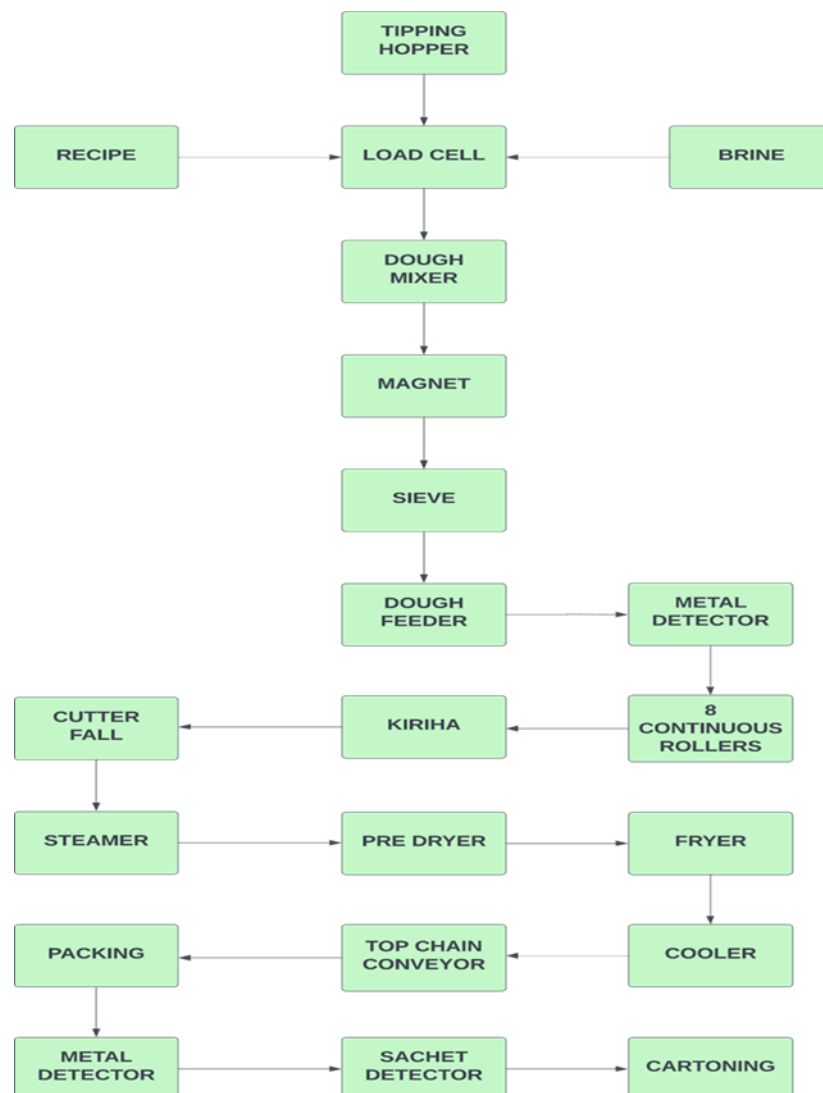


Figure 2.2: Process flow diagram of magi noodles

Dough Mixer: The dough mixer is an important piece of equipment in the production of noodles. It is a machine that is designed to mix the ingredients used in the dough mixture for the production of several types of noodles. The dough mixer is used to combine the flour, water, and other ingredients to create a smooth and consistent dough.

Magnet: Magnets are used in the production of noodles to eradicate metal particles from the raw ingredients, safeguarding that the final product is safe for consumption. Metal particles can be present in the raw ingredients due to various reasons, including the equipment used in the processing and packaging of the ingredients, or the other sources such as transportation or storage.

Sieve: Sieves are generally used in the production of noodles to remove impurities and ensure a constant texture in the final product. A sieve is a device that has a mesh screen or perforated surface that separates and filters particles of different sizes, to ensure only the desired size of particles pass through.

Dough Feeder: A dough feeder is an important piece of equipment in the production of noodles, as it helps to ensure that the accurate amount of dough is fed into the noodle-making machine. The dough feeder is responsible for transporting the dough from the mixing bowl to the noodle-making machine, where it is shaped into noodles.

Metal Detector: Metal detectors are used in noodles plants to detect and remove any metal impurities that may be present in the raw materials or finished products.

Continuous Roller: Continuous rollers are used to roll out the noodle dough to the desired thickness before it is cut into the vital shapes. One of the main advantages of using continuous rollers is that they can help to increase the productivity of the noodle production process. Continuous rollers can work uninterruptedly, producing a large volume of noodles in a short period of time. This can help to diminish the amount of time and labor required to produce a large volume of noodles.

Fryer: A fryer is a common equipment used in the production of instant noodles, especially for fried noodle varieties like ramen and yakisoba. It is employed to fry pre-cooked noodles in oil, resulting in a crispy texture and enhanced flavor.

Pre Dryer: In noodle production, a pre-dryer is frequently utilized to remove excess moisture from the noodle strands before they undergo the main drying process. Pre-drying ensures consistent and thorough drying, which is crucial for achieving high-quality noodles with the desired texture and flavor.

Steamer: A steamer is an essential equipment in the production of various types of noodles, including Chinese-style noodles like lo mein and chow mein, as well as Japanese udon noodles. It is typically used to cook the noodle dough before it is cut into strands and further processed.

Cooler: The cooler is a significant component in noodle production, responsible for reducing the temperature of freshly dried noodles before they are packaged. It prevents the noodles from becoming excessively hot, which can lead to sticking and loss of texture and shape.

Packing: Packing is the final stage in the noodle production process, ensuring that the noodles are properly protected during transportation and storage and presented to consumers in a clean and appealing manner. The packing process involves transferring

the dried and cooled noodles to a packing machine, which fills bags or containers with the appropriate quantity of noodles and seals them to maintain freshness.

Cartooning: Cartooning is an important step in noodle production, aimed at safeguarding the packaged noodles during transit and storage, as well as ensuring their attractive presentation to consumers. Automatic cartooning equipment is often used to improve production efficiency and minimize packaging errors. This process may also involve printing product information, expiration dates, and other relevant details on the cartons or boxes, as well as applying labels or additional packaging materials. Once filled, the cartons or boxes are sealed and prepared for shipment to distribution centers or retailers.

2.2 Lactogen

Lactogen is indeed a brand of infant formula produced by Nestle, a prominent food and beverage company. It is formulated to provide essential nutrition for infants who cannot be breastfed or when breastfeeding is not an option. The product consists of a well-balanced blend of high-quality ingredients, such as milk powder, vegetable oils, vitamins, and minerals, to support the healthy growth and development of infants.

Lactogen offers different varieties and stages to cater to the specific nutritional needs of infants at different ages and stages of development. This ensures that infants receive the appropriate nutrients as they grow.

One of the key advantages of Lactogen is its convenience and ease of use. The formula can be easily prepared by mixing it with water, allowing parents to quickly and conveniently feed their infants. This feature is particularly beneficial for busy parents or when traveling.

Another notable aspect of Lactogen is its extended shelf life, which means that it can be stored for a longer duration without compromising its quality. This flexibility allows parents to have a readily available supply of infant formula whenever needed.

Nestle's commitment to quality and nutrition is evident in the Lactogen brand. It has established itself as a trusted and popular choice among parents globally. By providing a safe and reliable option for infant nutrition, Lactogen continues to play a significant role in supporting the well-being of infants who require formula feeding.



Figure 2.3: Lactogen of Nestle

Hopper: A container or vessel used to hold and transfer materials in a controlled manner in manufacturing and industrial settings. It is commonly used for storing and distributing powders, granules, and other solid or semi-solid substances.

Compact Sieve: An industrial sieve used to separate and classify materials based on particle size. It is often used in the food processing industry to refine and sift ingredients, ensuring they are free of impurities and have a consistent particle size.

Rotary Magnet: A magnetic separator used to remove magnetic materials or contaminants from raw materials in the production process. It utilizes rotating magnets to attract and separate metal fragments or other magnetic particles.

Probiotics: Live microorganisms that provide health benefits when consumed in sufficient amounts. In infant food production, probiotics are added to support the development of a healthy gut microbiota in infants, which can contribute to immune system development and overall health.

Trace Elements: Essential minerals required by the body in small amounts for proper growth and development. In infant food production, trace elements such as iron, zinc, copper, and selenium are added to ensure infants receive adequate amounts of these important nutrients.

Vibratory Sieve: A sieve that uses vibration to move material along a screen mesh. The vibration allows smaller particles to pass through the mesh while larger particles are retained and cleared from the sieve.

Process floww diagraeme lactogen production

Can Filling: Can filling is an important step in the infant food production process, as it involves filling the prepared food into cans and sealing them to preserve the product's quality, safety, and shelf life. The can filling process typically involves the following steps:

- 1.Preparation of the food: Before the filling process begins, the infant food is prepared and cooked to the appropriate temperature, and any necessary ingredients such as vitamins and minerals are added.
- 2.Can preparation: The cans are cleaned and sterilized to ensure that they are free of contaminants that could affect the quality or safety of the food.
- 3.Filling: The prepared food is then pumped into the cans using a filling machine. The filling machine dispenses the appropriate amount of food into each can, and it is important to ensure that the filling is consistent across all cans.
- 4.Sealing: Once the cans are filled, the lids are placed on top of the cans, and the cans are moved through a seaming machine to seal the lids onto the cans. The seaming machine applies pressure to the lid and can body, and a seaming compound is used to create an airtight seal.

5. Inspection and labeling: After the cans are sealed, they are inspected for any defects or damage, and they are labeled with the appropriate information such as the product name, expiration date, and nutritional information.

6. Packaging and storage: The filled and labeled cans are then packaged into boxes or other containers and stored in a cool, dry place until they are ready to be shipped to distributors or retailers.

Overall, can filling is a critical step in the infant food production process, as it helps to ensure that the final product is of high quality, safe for consumption, and has a long shelf life.

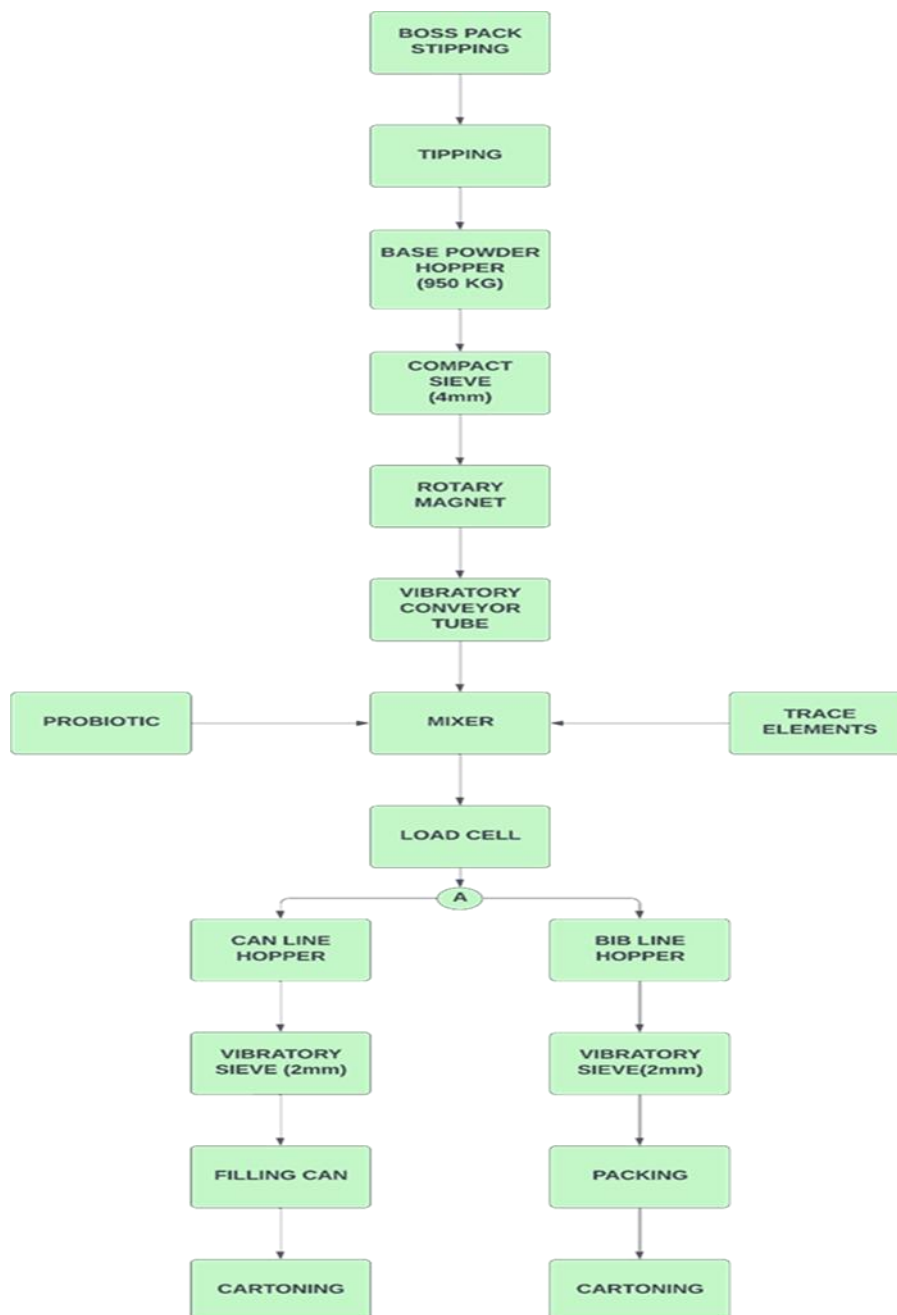


Figure 2.4: Process flow diagram of lactogen production

2.3 NESCAFÉ

Nescafe Classic: This is the original blend of Nescafe instant coffee, made from Robusta beans. It is available in various sizes, such as sachets, jars, and tins. Nescafe Classic offers a rich and flavorful coffee experience.

Nescafe 3-in-1: Nescafe 3-in-1 is a convenient variant that combines coffee, creamer, and sugar in a single sachet. It provides an all-in-one solution for coffee lovers who prefer a quick and hassle-free preparation. It comes in different flavors like original, latte, and mocha.

Nescafe Gold: Nescafe Gold is a premium variant of Nescafe instant coffee, made from Arabica beans. It offers a smoother and more refined taste compared to Nescafe Classic. Nescafe Gold is available in jars and tins, providing a more indulgent coffee experience.

Nescafe Dolce Gusto: Nescafe Dolce Gusto is a range of coffee machines and coffee pods that allows users to make café-style coffee at home. The machines use specially designed pods to create a variety of coffee beverages, including cappuccino, latte, and espresso. Nescafe Dolce Gusto provides a convenient and customizable coffee experience.

These Nescafe products offer a range of options for coffee enthusiasts in Bangladesh, catering to different tastes and preferences.



Figure 2.5: Nescafe

Process flow diagram of coffee production

Screw Conveyor: Screw conveyors are used in coffee production for efficient and gentle material handling. They can transport coffee beans or ground coffee from one location to another, such as between storage silos and processing or packaging machines. Screw conveyors are designed to handle delicate materials like coffee without causing damage or degradation.

Machine Hopper: A machine hopper is a container attached to a coffee processing machine that holds a supply of coffee beans or grounds. The hopper ensures a steady and

controlled flow of coffee material into the processing machine, such as a roaster or grinder. A well-designed hopper facilitates consistent and controlled material flow while being easy to load and clean.

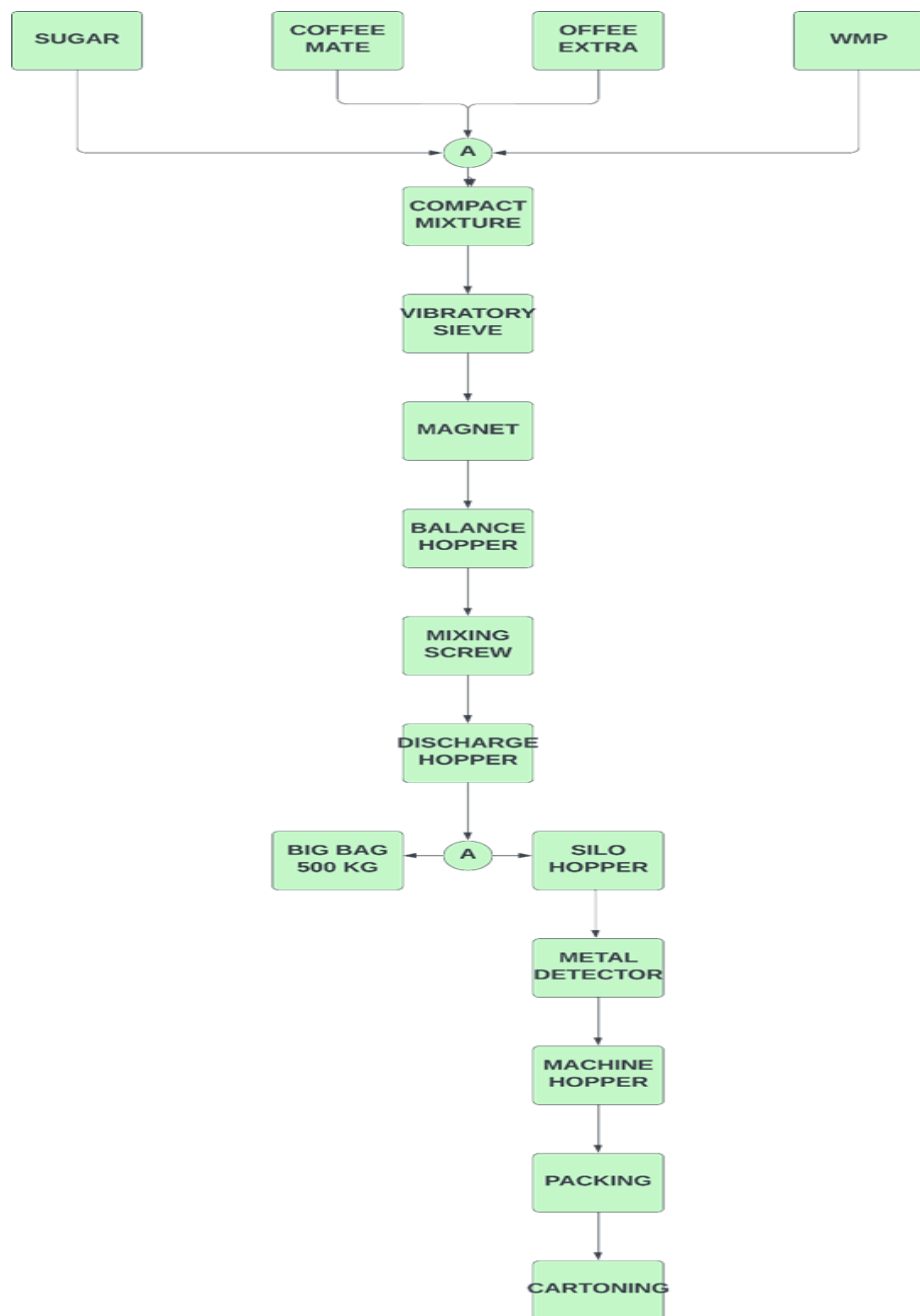


Figure 2.6: Process flow diagram of Nescafe

Discharge Plate: The discharge plate, or dosing plate, is part of a coffee packaging machine and controls the flow of coffee grounds into the packaging container. Located at the bottom of the dosing chamber, the discharge plate has adjustable holes or slots that regulate the amount of coffee grounds dispensed. It ensures the correct amount of coffee is filled into each package, promoting consistency and quality control while preventing overfilling or underfilling.

These components play important roles in coffee production, facilitating efficient material handling, maintaining coffee quality, and ensuring proper dosing and packaging.

2.4 Taste Maker

The masala mix is made from a combination of spices and herbs, including cumin, coriander, turmeric, and chili, among others. It is considered to provide a quick and easy way to add flavors to a variety of dishes, such as curries, stews, and other recipes.

MAGGI Masala-ae-Magic comes in small individual packets, each containing enough masala mix for a single serving of food. The packets are suitable to use, allowing consumers to easily add the masala mix to their cooking, without the need to measure out individual spices and herbs.

The product is marketed as a way to help home cooks and busy professionals save time and effort in the kitchen, while still being able to enjoy the reliable flavors of Bangladeshi cuisine. It has become a popular product in Bangladesh, where many consumers rely on pre-made masala mixes to add flavor and spice to their cooking.



Figure 2.7: Tastemaker

Process flow diagram of tastemaker production

Belt Conveyor: In the tipping section of a production line, a belt conveyor may be used to transport containers or other items that are being emptied or tipped into another part of the production process. For example, in the case of a beverage production line, the belt conveyor may be used to transport empty bottles to a tipping section, where they are filled with liquid and then tipped back onto the conveyor for further processing.

Belt conveyors are typically designed to be durable and easy to clean, in order to meet the hygiene and safety requirements of the food and beverage industry. They may also be equipped with various safety features, such as emergency stop buttons and safety guards, to ensure safe and reliable operation.

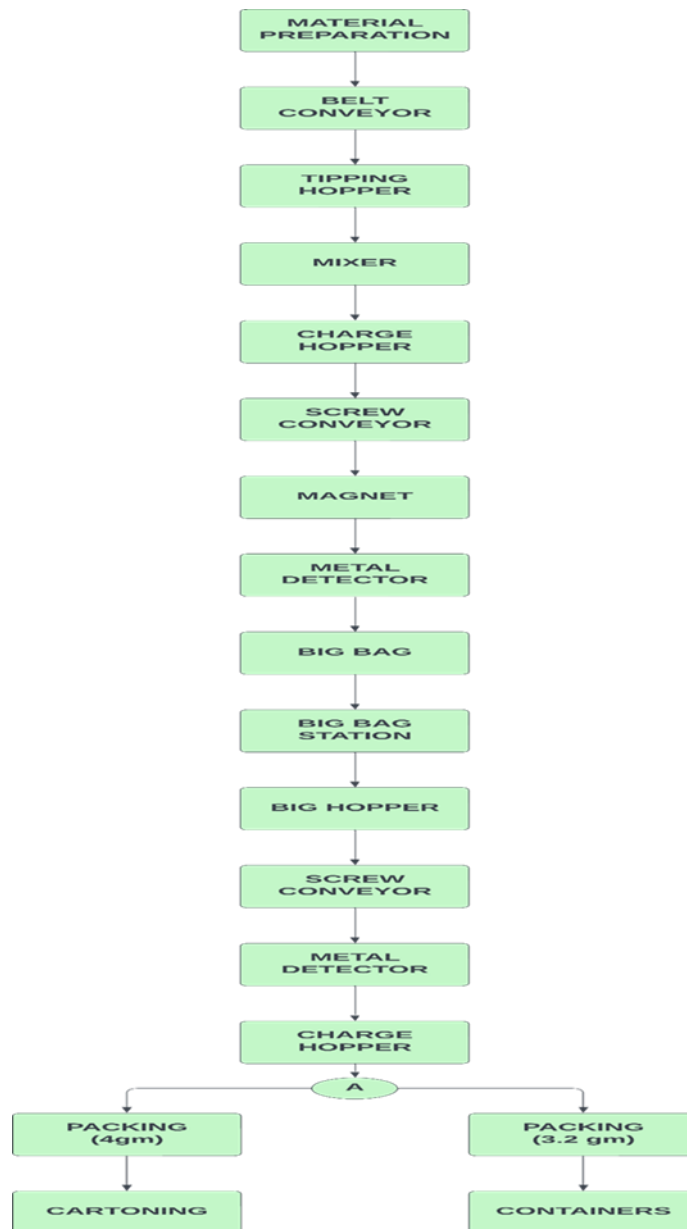


Figure 2.8: Process flow Diagram of Tastemaker Production

2.5 Cerelac

Cerelac is a brand of infant cereal produced by Nestle, a Swiss multinational food and beverage company. Cerelac is a popular product in Bangladesh, where it is widely used as a complementary food for infants and young children.

Cerelac is promoted in Bangladesh as a high-quality, nutrient-dense meal that is simple to digest and contains vital vitamins and minerals required for normal growth and development. The item is appropriate for babies as young as 6 months old and comes in a number of varieties, including wheat, rice, and mixed fruit.

Cerelac is often recommended by doctors and pediatricians in Bangladesh as a complementary food for infants who are being weaned off breast milk or formula. The

product is also popular among parents who want to ensure that their children are getting a balanced and nutritious diet, even if they are picky eaters or have dietary restrictions.

Nestle has a strong presence in Bangladesh, where the company has been operating for more than 100 years. In addition to Cerelac, Nestle produces a wide range of other food and beverage products in Bangladesh, including Nescafe coffee, Nido powdered milk, and Maggi instant noodles, among others.



Figure 2.9: Cerelac

Process flow diagram of Cerelac production

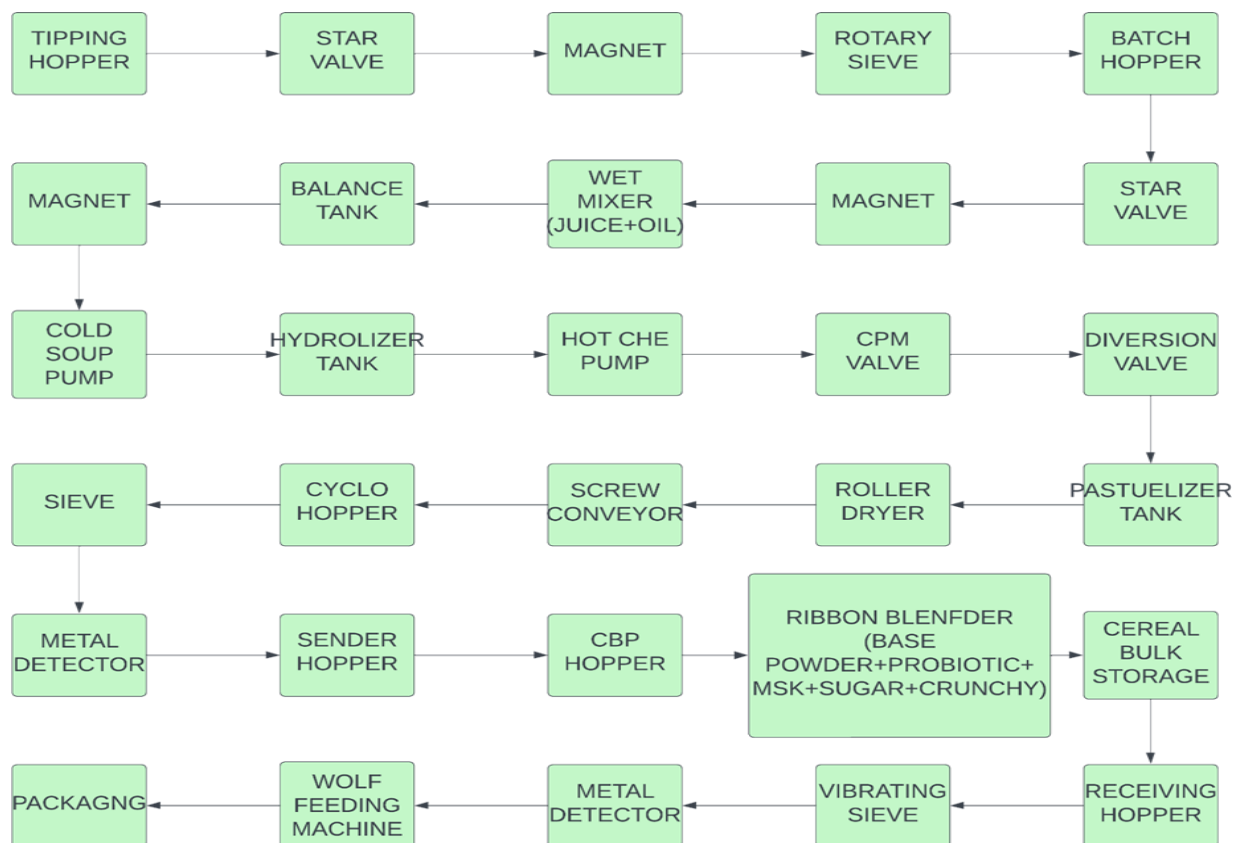


Figure 2.10: Process flow diagram of Cerelac production

Star valve: The star valve is positioned at the outlet of the hopper or silo in Cerelac production. It consists of rotating arms or blades that allow the Cerelac to flow through the gaps between the blades and into the packaging equipment. The star valve helps to regulate the flow of the product and ensure a controlled and efficient transfer.

Wet mixer: The wet mixer is a large stainless-steel vessel used in Cerelac production. It is designed to be easy to clean and maintain to meet strict hygiene standards. The wet mixer is where the dry ingredients, such as cereal grains, milk powder, and sugar, are combined with liquids to create a moist and homogeneous mixture. The mixture is prepared at the correct temperature and can be equipped with heating or cooling capabilities if necessary.

Balance tank: The balance tank is a vessel used to hold a specific quantity of liquid or slurry mixture in Cerelac production. It helps to maintain a constant level of the mixture, ensuring a steady flow to subsequent stages of the production process. The balance tank is typically made of stainless steel, insulated to maintain temperature, and equipped with a level sensor and mixer or agitator. It holds the mixture of liquid and dry ingredients, allowing for uniformity and steady production.

Roller dryer: The roller dryer is a critical component in Cerelac production used for drying and dehydrating the wet mixture prepared in the wet mixer. It consists of rotating metal cylinders or rollers that are heated to a specific temperature. The wet mixture is applied as a thin layer to the rollers, and as they rotate, the heat dries and dehydrates the mixture. The dried mixture is then scraped off the rollers as a dry powder. The roller dryer ensures the moisture content of the mixture is reduced to the desired level, allowing for packaging and storage.

These components work together in the Cerelac production process to ensure the accurate blending, drying, and preservation of the product

In addition to drying the mixture, the roller dryer may also include other features, such as cooling zones or conditioning sections, which help to stabilize the moisture content and temperature of the dried mixture before it is packaged.

Wolf Feeder: In Cerelac production, a wolf feeding machine (also known as a volumetric feeder) is a type of equipment used to measure and feed a precise amount of dry powder ingredients into the production line. The machine is designed to ensure that the correct amount of each ingredient is added to the mixture, helping to maintain the quality and consistency of the final product.

The wolf feeding machine consists of a hopper, a feeding mechanism, and a control system. The hopper is a container that holds the dry powder ingredients, such as cereal grains, vitamins, and minerals. The feeding mechanism is typically a rotating screw or auger that moves the dry powder from the hopper and dispenses it into the production line. The control system is responsible for monitoring and adjusting the feed rate to ensure that the correct amount of powder is dispensed.

The wolf feeding machine is designed to be precise and accurate, ensuring that the correct amount of each ingredient is added to the mixture. This is important for maintaining the

quality and consistency of the final product, as even small variations in the amounts of ingredients can affect the taste, texture, and nutritional value of the product.

The wolf feeding machine is typically used in conjunction with other equipment in the Cerelac production line, such as the wet mixer and roller dryer. By ensuring that the correct amount of each dry ingredient is added to the mixture, the wolf feeding machine helps to ensure that the final product is of high quality and meets the required standards.

2.6 Nido

The international food and beverage corporation Nestle manufactures powdered milk under the brand name Nido. The purpose of Nido milk powder is to offer a practical and wholesome substitute for fresh milk, especially in places where fresh milk might not always be accessible..

Nido milk powder is made from high-quality cow's milk that has been spray-dried to produce a fine powder. The milk is first concentrated to remove most of the water, and then the remaining milk solids are dried using a spray-drying process. This process helps to preserve the milk's nutritional content and flavor, and it also makes the milk more shelf-stable and easier to transport.

Nido milk powder is available in several different varieties, including whole milk, low-fat milk, and milk with added vitamins and minerals. It can be used to make a variety of dairy-based products, such as milkshakes, smoothies, and hot chocolate, as well as in recipes that call for milk.

The Nido brand is known for its high-quality standards and commitment to providing nutritious and convenient dairy products. The brand is popular around the world, particularly in areas where fresh milk may not be readily available or affordable



Figure 2.11: Nido

Packaging process flow diagraeme of Nido

Filling: Milk powder filling by Nichrome machine refers to the process of filling milk powder into pouches or containers using a specialized filling machine manufactured by Nichrome, a company that produces packaging machines for various industries.

The milk powder filling machine by Nichrome is designed to accurately fill milk powder into pouches or containers in a hygienic and efficient manner. The machine uses advanced technology to ensure accurate and consistent filling of the milk powder, while also minimizing product wastage and contamination.

The milk powder filling machine by Nichrome typically includes the following components:

1. Feeding system: This system consists of a hopper or container that holds the milk powder and a conveyor belt or auger that feeds the powder into the filling machine.
2. Filling system: This system includes a filling mechanism that dispenses a precise amount of milk powder into the pouches or containers.

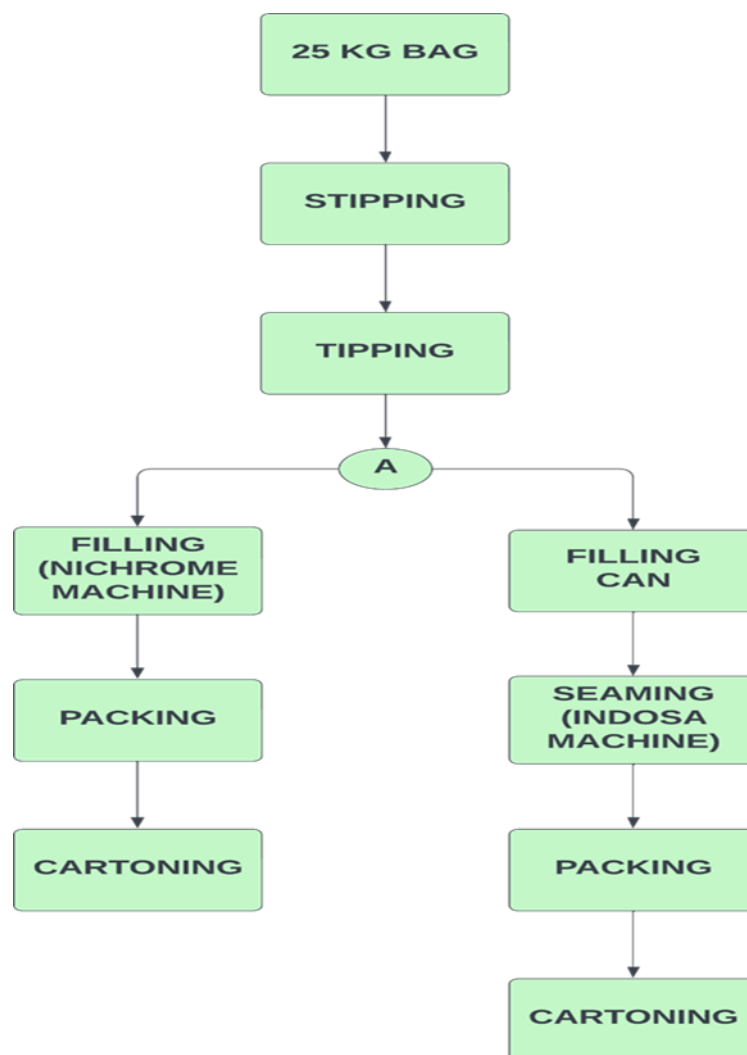


Figure 2.12: Packaging Process of Nido

3. Weighing system: This system uses load cells or sensors to weigh the milk powder before and after filling to ensure accurate and consistent filling.

4. Sealing system: This system seals the pouches or containers after filling to maintain the product's quality and prevent contamination.

The milk powder filling device from Nichrome is made with features like touch-screen controls, automated adjustments for various product sizes, and high-speed filling capacities to make it user-friendly and simple to use. The machine is also designed to be easy to clean and maintain, with components that can be easily disassembled for cleaning and sterilization.

Seaming: Seaming is the process of sealing the metal lids onto the can or container that holds the powdered milk in the production process. In the case of Nido powdered milk production, seaming is done using a seaming machine manufactured by Indosa.

The seaming process involves placing the metal lids onto the top of the filled cans and then crimping the edges of the lids to the can body to create a hermetic seal. The seaming machine by Indosa is designed to perform this operation quickly and accurately, with high-speed seaming capabilities to meet the demands of large-scale milk powder production.

2.7-Task: Stream consumption optimization

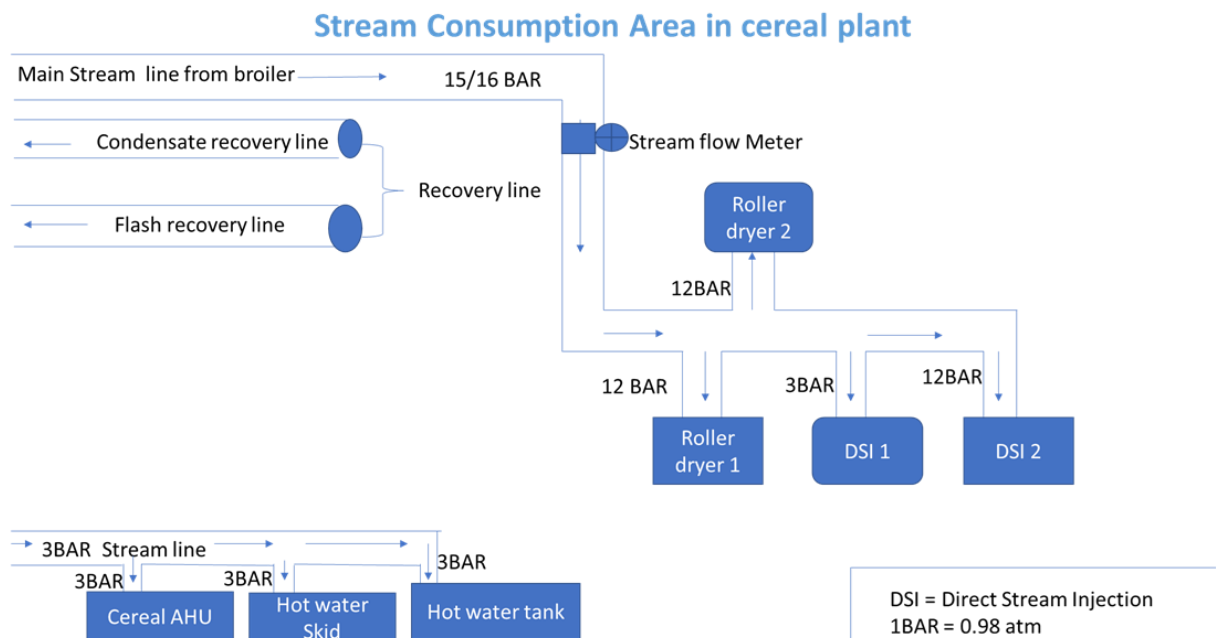


Figure 2.13: Stream consumption Area in cereal plant

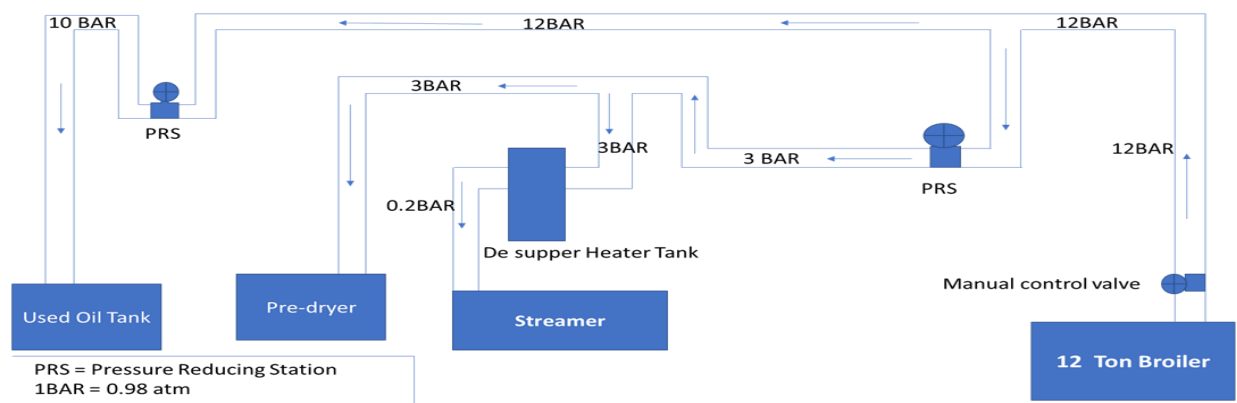


Figure 2.14: Stream consumption area in Noodles plant

Date and Day	Day wise Stream consumption (kg/hr)	Day wise production(kg)	
08/02/2023 Wednesday	29362	23975	
09/02/2023 Thursday	951	OFF	
10/02/2023 Friday	3350	OFF	
11/02/2023 Saturday	28121	20679	
12/02/2023 Sunday	27522	21404	
13/02/2023 Monday	32503	19915	
14/02/2023 Tuesday	34104	25472	
15/02/2023 Wednesday	27055	23184	
16/02/2021 Thursday	4366	OFF	
17/02/2021 Friday	5489	OFF	
	Total: 192823 kg	Total : 134629 Kg	
		Total :134.629T	
			Stream consumption rate = 192823/134.629
			Ans.1432.25 kg/T

Figure 2.15: Stream consumption against production

CHAPTER 3

3. Quality Assurance

Quality assurance is a strategy and a set of actions for ensuring quality in the processes used to make products. In order to prevent flaws from escalating while the product is being developed, quality assurance works to advance the development and testing process. Nestle places more emphasis on quality assurance than quality control because, as we all know, prevention is preferable to treatment.

Consumers can always rely on the Nestle name to know that a product is of the highest caliber and safety. Safety and quality for consumers are Nestle's top concerns.

Following the lead of the Good Food, Good Life Company Nestle thinks that by harnessing the power of food, we can all live better lives today and in the future. The Nestle Bangladesh Ltd. department in charge of quality assurance. Their goal is to confirm client pleasure, to guarantee incoming quality, or high-quality production. For customers and consumers, nestle employees are dedicated to preserving high standards of quality.

3.1 Policy on Quality in Nestle

At Nestle, teamwork, engagement, ownership and support by everyone are energetic for achieving their quality objectives. Nestle has mainly four elements of Quality Policy-

1. **Commitment to Compliance and Quality Standards:** Nestle places a strong emphasis on full adherence to both internal and external regulatory obligations. All items will fulfill the highest standards for safety and quality thanks to this dedication.
2. **Continuous Improvement:** In all facets of their business, Nestle is devoted to a culture of continual development. Processes, goods, and services are included. They strive to improve quality and effectiveness by consistently looking for better ways to do things.
3. **Employee Involvement and Training:** Nestle is aware of the crucial role that its workers play in maintaining quality. To make sure that everyone on the team is aware of and supportive of their dedication to quality, they spend money on training and development initiatives.
4. **Customer Focus:** Understanding and addressing the demands of its clients is very important to Nestle. They aggressively solicit customer input and act upon it to enhance their goods and services.

These components serve as the cornerstone of Nestle's approach to quality management, demonstrating their commitment to supplying goods that satisfy the highest requirements for nutrition, safety, and flavor.

Good Manufacturing Practice

Making sure that products are regularly produced and regulated in compliance with quality standards is the aim of good manufacturing practices (GMP). Being a multinational food and beverage corporation, Nestle prioritizes GMP in all areas of its operations. How Nestle applies GMP is seen here:

- 1. Stringent Quality Standards:** Nestle upholds strict quality standards across all phases of production. This covers all processes, from locating raw resources to manufacturing finished items.
- 2. Comprehensive Training:** To make sure that they comprehend and follow GMP principles, Nestle's staff members go through comprehensive training. This instruction covers a variety of topics, such as cleanliness, handling equipment, and quality control.
- 3. Hygiene and Sanitation:** Nestle places a high priority on keeping the environment tidy and healthy. To guarantee that all machinery and manufacturing facilities adhere to high hygiene requirements, regular cleaning and sanitation plans are in place.
- 4. Documented Procedures:** Nestle keeps thorough records of every step of its operations. To make sure that each stage in production is carried out consistently and in accordance with GMP, this documentation serves as a reference point.
- 5. Calibration and Maintenance:** To guarantee maximum performance, all machinery and equipment undergo regular calibration and maintenance. This lessens the possibility of quality discrepancies brought on by faulty machinery.
- 6. Quality Control Labs:** Before goods are released onto the market, they go through rigorous testing in Nestle's specialized quality control labs. This guarantees that they satisfy all safety and quality requirements.

3.2 HACCP Follows in Nestle

Like many other food producers, nestle uses Hazard Analysis and Critical Control Points (HACCP) as a systematic preventative approach to food safety to detect and mitigate possible risks. Nestle adheres to HACCP as follows:

- 1. Conducting Hazard Analysis:** Nestle starts by determining any potential biological, chemical, or physical dangers in the food production process. This comprises risks that could appear at each stage, from the procurement of raw materials to the packaging of the finished product.
- 2. Identifying Critical Control Points (CCPs):** After identifying potential dangers, nestle decides which steps in the production process are crucial for preventing such hazards. The Critical Control Points (CCPs) are these. CCPs might, for instance, include cooking temperatures or sterilizing procedures.
- 3. Setting Critical Limits:** Nestle defines critical limits at each CCP, which are requirements that must be fulfilled in order to guarantee the safety of the product. Regulations and scientific studies are frequently the foundations for these restrictions.
- 4. Monitoring CCPs:** Nestle implements measures to keep an eye on and manage each CCP. In order to confirm that the critical limitations are being respected, this may entail routine testing, observations, or measurements.
- 5. Establishing Corrective Actions:** Nestle has mechanisms in place to deal with the situation if a CCP deviates from its critical limit and a possible danger is discovered. These remedial measures are intended to stop dangerous goods from reaching customers.
- 6. Verification and Validation:** Nestle routinely checks the HACCP system's effectiveness. To verify the efficacy of the HACCP plan, this entails analyzing data, performing audits, and occasionally even conducting tests or experiments.
- 7. Documentation and Record Keeping:** The HACCP plan at Nestle is meticulously documented, and this documentation includes hazard evaluations, CCPs, critical limits, monitoring data, and remedial actions implemented. For the purpose of proving compliance with food safety rules, this paperwork is essential.
- 8. HACCP Training:** Nestle makes sure that everyone engaged in the production process has received the necessary HACCP training. This includes being aware of their responsibilities for keeping an eye on CCPs and acting appropriately as necessary.
- 9. Regular Review and Update:** The HACCP strategy for Nestle is dynamic. It is often reviewed and changed to reflect new scientific understanding, altered rules, or technological or procedural advancements.

Nestle's HACCP strategy is flexible. It is often reviewed and modified to reflect new scientific knowledge, modified laws, or procedural or technological developments..

3.3 Quality Monitoring Scheme (QMS) in Nestle

The bulk of Nestle's internal policies are the foundation of the quality control program. Actually, a quality control system is in place for every product. Nestle A quality monitoring document is necessary to access the product, decide who will use it, where they will use it, and how they will use it. At Nestle, quality monitoring procedures largely fall into three categories:

- Raw material, process, and finished product
- Quality management systems

3.4 Quality Assurance Laboratory

About Laboratory

The QA lab's full name is Nestle QA lab. The Nestle QA lab conducts analyses on the final goods produced by the Nestle facility as well as the packaging of the raw materials used to make the goods. Environmental samples that are gathered from the manufacturing area are also subjected to microbiological investigation at the Nestle QA lab.

QA lab at Nestle Process-based quality management systems is used. There is an owner who is in charge of executing and overseeing each procedure. There are two analytical departments in the Nestle QA lab: chemical and microbiological. The management of the Nestle QA lab views its employees as its greatest valuable resource. The Nestle QA lab's whole apparatus is calibrated, and every process is approved. The lab has an effective system for managing its documentation and data.

Chemical Laborator.

The chemical laboratory is furnished with specific workspaces created for various tasks. These spaces are set up to support particular tasks and provide a controlled atmosphere for precise testing and analysis. In order to sustain Nestle's commitment to quality and safety, the laboratory is essential. It makes certain that final goods and raw materials satisfy the high requirements of the firm and adhere to all applicable laws. Additionally, the work done in the laboratory is crucial to quality planning, which is outlined in ISO 9001 standards. This entails developing a quality monitoring system that specifies the standards for evaluating items. This system makes sure items adhere to all relevant legal and quality criteria and helps establish their acceptability for a variety of functions. To provide precise and trustworthy findings, the lab also performs routine equipment calibration and maintenance. Establishing procedures, timetables, and records for cleaning and maintenance work are all included in this.

Overall, Nestle's chemical laboratory is essential to the company's quality assurance procedure and helps it produce consumer goods that are both safe and of the highest caliber.

Laboratory for Microbiology

Under ideal internal and external circumstances, microorganisms will multiply very quickly, leading to food spoiling and food deterioration. Nestle performs a variety of microbiological testing on their finished goods to maintain the highest degree of food safety since they place their customers as a top priority.

There are several rooms in the microbiological lab with various setups for various tasks. There are rooms for incubators, preparing and storing media, decontaminating, analyzing microbes, and entering data.

Incubator Room- Five adjustable incubators for 37°C microbial growth are available in the incubator room..

Room for preparing media: In the room where the media is prepared, biological waste is managed. The medium is heated for 15 minutes at 15 different pressures to 121 °C.

Room for Decontamination: the completion of media preparation. Treatment waste does not naturally discharge.

Sensory Laboratory

Every day, the Sensory Lab holds testing sessions where qualified panelists assess a range of items. Each product category-specific panelist has received training. The sensory testing involves three different product categories: raw materials, intermediate goods (HULL), and finished items. The panelists evaluate the items' look, flavor, smell, and color.

For each specific batch, a minimum of four panelists from the selected group must evaluate the products. An approval rate of at least 80% is required for a product to be released.

Before conducting sensory tests, panelists are required to adhere to certain rules:

They should avoid using perfumes, strongly scented shower products, lipsticks, or aftershaves that could interfere with their sense of smell.

- If a panelist is feeling unwell or unable to attend a session, they must inform the sensory coordinator. Over time, food allergies can develop, and it is the panelists' responsibility to notify the coordinator if they have any allergies.
- Panelists should avoid smoking, consuming tea, coffee, spicy foods, or chewing gum before the testing session, as these substances can affect their sensory perception.
- Quality checks are done in addition to the sensory assessment. The shelf-life extension and end-of-shelf behavior of a product are studied after six months of testing. This guarantees that the item will continue to be of high quality throughout time.

Packaging Lab

At Nestle QA lab, the packaging materials used for Nestle's products are thoroughly checked. Packaging plays a crucial role in preserving the quality and freshness of Nestle's

products, making it a top priority for Nestle Bangladesh. The company takes great care in selecting reliable vendors for its packaging materials. On the basis of particular needs, the right packaging materials are chosen for the items to guarantee the nutritional balance and freshness. These materials bear important information such as nutritional details, net weight, product name, and preparation instructions, as Nestle offers various edible products in Bangladesh.

Room with Normal Temperature: Products are kept in the NRT room so that the quality trend may be studied up until the end of the shelf life. To determine the quality of a product, it is stored for 3, 6, or more months than its shelf life. Raw materials continue to be stored in the NRT room.

The packaging materials undergo a scanning process in the lab. A scanner machine compares all the information on the packaging with the standard artwork, identifying any discrepancies that may arise. Additionally, the Packaging Lab is equipped with an oven used for sensory analysis of the packaging materials

The process in the Packaging Lab involves the following steps:

- The foil packaging material is placed in the oven at 40°C for one hour.
- After one hour, an approved tester analyzes the packaging material, particularly focusing on any strong odors. If a strong odor is detected or any other issues are found, the tester deems the material as "OUT."
- It is crucial to conduct sensory tests on the packaging material before its release. Neglecting this step could result in finished products being contaminated through faulty packaging materials.

3.5 Sampling Technique of Raw material

Different raw ingredients are utilized for various products at Nestle Bangladesh. The management of raw materials must be done correctly to produce final goods of the highest quality. Nestle Bangladesh has chosen a few suppliers for its packaging and raw ingredients. For its raw materials, they work with 60 different vendors. ingredients including wheat flour, oil, sugar, and spices. Following the flowchart below, the raw material coordinator releases these raw materials:

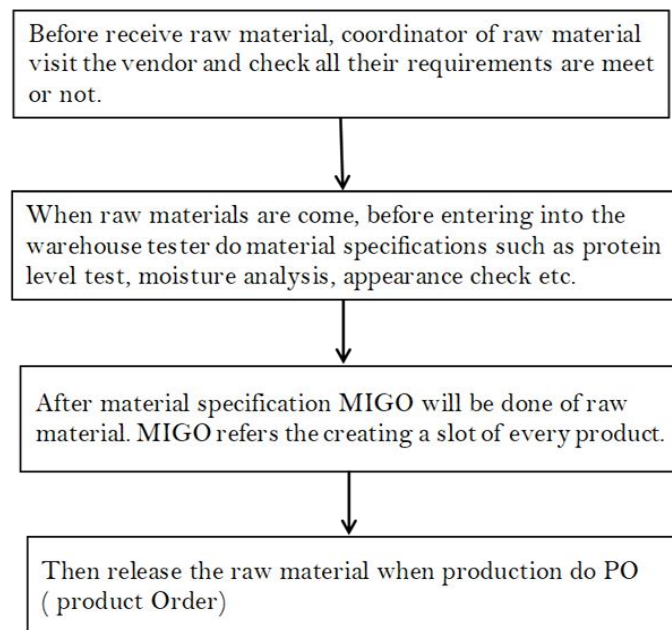


Figure 3.1: Raw material sampling process

3.6 Managed Consumer Complaints

Consumer are always put first priority at Nestle Bangladesh. They respond appropriately to any suggestions or complaints made by customers. Consumer complaints are also managed by Nestle QA lab. Nestle offers customer care through a mailbox and call center. Consumer complaints are handled according to the processes is given below-Nestle has a 1:1 replacement policy to please their customers. According to this policy, defective items are replaced with new ones.

CHAPTER 4

4. Learning outcomes and Conclusion

4.1 Learning Outcomes

Management System:

- **Organizational Structure:** Understand how the company is organized, including departments, teams, and their respective roles.
- **Decision-Making Processes:** Learn about how decisions are made, from day-to-day operations to major strategic choices.
- **Communication Channels:** Explore how information flows within the organization and how different departments interact.

Production System:

- **Production Process:** Gain a detailed understanding of how products are manufactured or assembled, step by step.
- **Equipment and Technology:** Learn about the machinery and technology used in the production process.

Quality Control and Testing

- **Testing Procedures:** Explore the various tests conducted to ensure the quality of products. This might include physical, chemical, microbiological tests, etc.
- **Quality Standards:** Understand the criteria that products must meet to be considered acceptable.
- **Rejection and Rework Procedures:** Learn what happens when a product doesn't meet the quality standards.

4.2 Conclusion

My internship at Nestle Bangladesh Limited has provided us with an invaluable learning experience. Throughout our time at the company, we had the privilege of working alongside industry professionals in various departments, including production, supply chain, Quality Assurance, industrial services. This exposure has given us a comprehensive understanding of Nestle's operations in Bangladesh and the company's unwavering commitment to quality, safety, and sustainability. The production department impressed us with its focus on efficient and consistent manufacturing. By utilizing advanced technology and machinery, nestle has set a high standard for the food and beverage industry in Bangladesh. We witnessed the implementation of stringent quality control protocols that ensured Nestle's products met the highest standards, a clear testament to the company's dedication to excellence. In the supply chain department, Nestle's use of data analytics and advanced technologies in managing its supply chain sets it apart from competitors. The team's ability to effectively oversee a vast network of suppliers, distributors, and transportation partners was remarkable. We gained valuable insights into the significance of maintaining efficiency and timely delivery to guarantee customer satisfaction. The safety, health, and environment department at Nestle impressed us with

its commitment to providing a safe and healthy working environment for employees. The team's proactive approach to hazard identification, risk assessment, and the provision of personal protective equipment ensured strict adherence to safety protocols. This experience highlighted the importance of prioritizing the well-being of employees in any workplace setting. Lastly, the industrial services department's dedication to the maintenance and upkeep of Nestle's production machinery and equipment was essential in ensuring uninterrupted production. We observed the team's proactive approach to regular inspections and preventive maintenance, which minimized downtime and maximized productivity. In conclusion, our industrial attachment at Nestle Bangladesh Limited has been an enriching and valuable experience. We are grateful for the opportunity to work with such a reputable company. The skills and knowledge we have gained during this program will undoubtedly contribute to our future careers. We greatly admire Nestle's commitment to quality, safety, and sustainability, and we aspire to carry these values with us as we continue to grow professionally.

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