



**PRODUCTION AND QUALITY CONTROL OF PRAN-RFL GROUP
AT HABIGANJ AGRO LIMITED
AN INTERNSHIP REPORT**

BY

DEEP RANJON ROY

ID: 203-34-362

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

Supervised By

Dr. Nizam Uddin

Associate Professor and Head
Department of Nutrition and Food Engineering

Co-Supervised By

Abu Saeid

Lecturer (Senior Scale)
Department of Nutrition and Food Engineering

**FACULTY OF HEALTH AND LIFE SCIENCES (FHLS)
DAFFODIL INTERNATIONAL UNIVERSITY
JANUARY 2024**

APPROVAL

This internship report titled “**Production and quality control of PRAN-RFL group at habiganj agro limited**”, submitted by **Deep Ranjon Roy** to the Department of Nutrition and Food Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Nutrition and Food Engineering and approved as to its style and contents.



Dr. Nizam Uddin

Head

Nutrition and Food Engineering

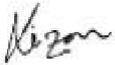
Faculty of Health and Life Sciences

Daffodil International University

DECLARATION

We hereby declare that this project has been done by us under the supervision of **Dr. Nizam Uddin, Associate Professor and Head, Department of Nutrition and Food Engineering, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



Dr. Nizam Uddin

Associate Professor and Head
Department of Nutrition and Food Engineering
Daffodil International University

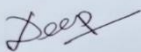
Co-Supervised by:



Abu Saeid

Lecturer (Senior Scale)
Department of Nutrition and Food Engineering
Daffodil International University

Submitted by:



Deep Ranjon Roy

ID: 203-34-362
Department of Nutrition and Food Engineering
Daffodil International University

ACKNOWLEDGEMENT

First, I express my heartiest thanks and gratefulness to almighty for His divine blessing makes it possible to complete the final year internship successfully.

I am grateful to my supervisors, **Dr. Nizam Uddin, Associate Professor and Head**, Department of NFE, Daffodil International University, and **Md. Shohel Rana, AGM**, Quality Control Department, Pran Factory Habiganj, PRAN-RFL Group, for their encouragement and support throughout my organizational attachment term and for providing me with such learning opportunities. My thanks go to the entire Department of Nutrition and Food Engineering at Daffodil International University for developing an Internship Program for us that allows us to use academic knowledge in real-life situations.

I would like to thank my Co-supervisor **Abu Saeid, Lecturer** (Senior Scale) in the Department of Nutrition and Food Engineering. Her kind advice and assistance helped me finish the study report.

I would also want to thank Habiganj Agro Limited, Olipur, Shayestaganj, Habiganj, as well as my colleagues, seniors, and coworkers, for their sound advice, recommendations, inspiration, and support. I must remark that this firm has a terrific working environment and collective devotion, which has allowed me to deal with a range of situations.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

EXECUTIVE SUMMARY

This term paper represents my contemplation on the 15-day internship I completed at Habiganj Agro Limited, situated in Olipur, Shayestaganj, Habiganj, Bangladesh. The hands-on experience and knowledge gained during this internship significantly contributed to my understanding of various fields such as PCL, carbonated soft drinks, PE, noodles, croissants, chips, biscuits, cakes, and research and development. PRAN, a leading food industry in Bangladesh, plays a crucial role in addressing issues of hunger and poverty by focusing on productive enterprises to generate employment opportunities and instill pride in fellow citizens. As one of the country's most successful companies, PRAN significantly contributes to the national economy by providing employment and reducing the unemployment rate. PRAN, symbolizing life's taste, stands out as a unique food company in Bangladesh. Notably, they distribute their diverse products, spanning confectionery, farm products, bottled water, baked products, soft drinks and cookies, to 144 different countries daily. Among the key players in the PRAN-RFL group is Habiganj Agro Limited, a major food production company where products like fruit juice, carbonated soft drinks, wheat bread, wafer, and spices are manufactured. My internship at Habiganj Agro Limited offered a valuable opportunity to observe and gain firsthand experience in their processes. The company exhibited courtesy by furnishing me with all the essential resources, enabling me to concentrate on my academic pursuits during the internship duration.

SIGNIFICANCE OF THE STUDY

Food manufacturers are continually exploring novel product development, and PRAN stands out for being the leading player in Bangladesh with an extensive range of over 200 food products. PRAN distinguishes itself by not only producing a wide variety but also by actively innovating new products. Their focus on creating inventive flavored fruit juices and carbonated beverages sets them apart from their competitors. PRAN's products enjoy widespread popularity, not only within Bangladesh but also on a global scale. The realm of polyethylene line and beverage offers a unique and promising career path for food engineers, presenting an opportunity for further exploration and study.

The report provides a comprehensive insight into production management, offering a holistic view of various aspects such as quality assurance, research and development, distribution, and storage. This inclusive approach allows professionals to gain a thorough understanding of the entire production management spectrum, making it an exceptional and distinctive career avenue for food engineers.

TABLE OF CONTENTS

CONTENTS	PAGE
Approval	i
Declaration	ii
Acknowledgment	iii
Executive Summary	iv
Significance of the study	v
CHAPTER 1: INTRODUCTION	1-2
1.1 Introduction	1
CHAPTER 2: PRAN CONFECTIONARY LIMITED	2-5
2.1 PRAN Hurry wafer	2-3
2.2 PRAN Coffee Candy	4-5
CHAPTER 3: CROISSANT	6-9
3.1 ALL TIME Honeycomb	6-7
3.2 ALL TIME Choco vanilla Bun	8-9
CHAPTER 4: POLYETHYLENE LINE	10-11
4.1 PRAN Nawabi Lacchi	10-11
CHAPTER 5: NOODLES	12-13
5.1 Instant Noodles	12-13
CHAPTER 6: CHIPS	14-15
6.1 Zeros Chips	14-15

CHAPTER 7: BISCUITS	16-17
7.1 PRAN Special Toast	16-17
CHAPTER 8	18-19
8.1 Quality Assurance Criteria and Testing	18-19
CHAPTER 9: CONCLUSION	20
REFERENCES	21

CHAPTER 1

INTRODUCTION

1.1 Introduction

PRAN-RFL Group is a Bangladeshi food-products corporation headquartered in Dhaka, Bangladesh, established in 1981. Major General (Ret) Amzad Khan Chowdhury, a native of Natore, served as the founder and managing director of PRAN-RFL Group. Currently, his son, Mr. Ahsan Khan Chowdhury, holds the position of deputy managing director within the group. PRAN-RFL Group has evolved into one of the most significant and successful companies in Bangladesh, challenging multinational counterparts. The acronym PRAN stands for Program for Rural Advancement Nationally. It has become a widely recognized household name among millions of people in Bangladesh and beyond. Since its inception in 1980, PRAN Group has expanded its operations and become the largest fruit and vegetable processor in Bangladesh. As the largest food and nutrition company in Bangladesh, PRAN-RFL Group holds the distinction of being the largest exporter of processed agro products to over 82 countries, adhering to HALAL and HACCP compliance. The company's core activities revolve around the manufacturing and sale of juice, snacks, soft drinks, cakes, and dairy products. Commencing its journey in 1981 as a processor of fruits and vegetables in Bangladesh, PRAN has achieved global reach with exports to 94 countries.

The products produced by PRAN at Habiganj Agro Limited in Olipur, Shayestaganj, Habiganj, fall within various types of manufacturing. These include biscuits, croissants, PE, wafers, cake, toast, noodles, and chips.

Unit	Products
PCL	Wafer, Candy.
CSD	Pran Frooto, Coke, Power.
Croissant	Honeycomb, Choco vanilla.
PE	Mr. Yogurt, Lacchi, Litchi Drinks.
Noodles	Instant Noodles, Cup Noodles.
Chips	Potato cracker, Zeros chips, Twisters
Biscuits & Toast	Bisk Club Biscuit, Pran potato, Ghee Toast, Pran special Toast.
Bread & Cake	All time bread, Dry Cake, All time slice cake, Sandwich sponge cake, All time Family plain cake.

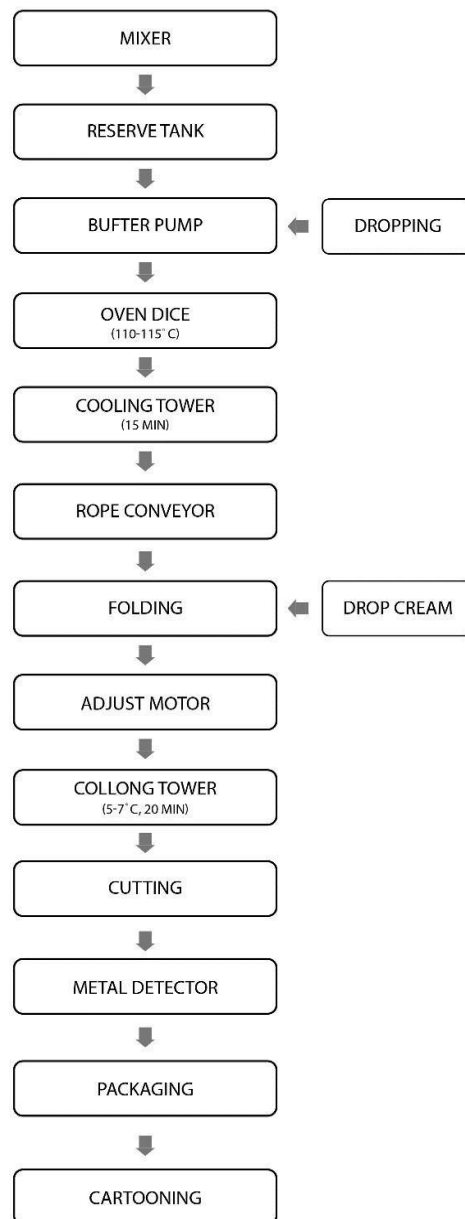
CHAPTER 2

PRAN CONFECTIONARY LIMITED

2.1 PRAN Hurray Wafer

PRAN Hurray wafer is a simple, traditional wafer biscuit with delicious cream inside that is joined in layers. Initially released in 2014, this wafer. Currently, Hurray wafer is succeeding on the market thanks to improved testing and appealing box design.

Process Flow Chart:



Description:

The production process commences with the mixer, where raw ingredients are meticulously combined. The resultant mixture is then transferred to a reserve tank for temporary storage. From the reserve tank, the mixture undergoes the butter pump stage, where controlled amounts are added in a dropping fashion, ensuring precise incorporation. Subsequently, the product progresses to the oven dice, subjected to a temperature range of 110-115°C for thorough cooking.

After the oven dice, the product enters the cooling tower for a duration of 15 minutes, allowing it to achieve the desired temperature and consistency. The next step involves the rope conveyor, facilitating the seamless movement of the product along the production line. During the folding stage, drop cream is added, contributing to the final composition.

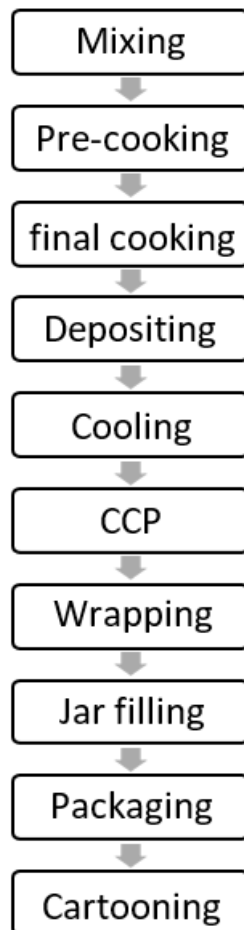
To ensure optimal performance, the process includes an adjustment of the motor. The product then undergoes an additional cooling tower phase, with temperatures ranging from 5-7°C for a duration of 20 minutes. Following this, the product moves on to the cutting stage, where it is precisely shaped into the desired form.

A metal detector is employed to ensure the absence of any contaminants. The product is then packaged to preserve its quality and freshness. Finally, the packaged products are subjected to the cartooning stage, where they are systematically placed into cartons for efficient distribution and retail handling. This comprehensive flowchart outlines the sequential progression of the production process, emphasizing precision at each stage for quality assurance.

2.2 PRAN Coffee Candy

"PRAN Coffee Candy" is a delicious candy that PRAN makes with an amazing coffee flavour. It provides a wonderful flavour and mouthfeel.

Process flowchart:



Description:

The production process begins with the Mixing stage, where raw ingredients are carefully combined to form a homogeneous mixture. Subsequently, the mixture undergoes the Pre-cooking phase to prepare it for further processing. Following this, the Final Cooking stage is implemented to achieve the desired texture and flavor of the product.

After the cooking stages, the mixture is then Deposited onto a surface or mold for shaping. The shaped product then undergoes Cooling to set its form and reach an appropriate temperature. At the Critical Control Point (CCP), thorough monitoring takes place to ensure the product's safety and quality throughout the production process.

Once the product has been shaped and cooled, it moves on to the Wrapping stage, where it is securely packaged for protection and freshness. If applicable, the product may also go through Jar Filling, where it is filled into jars for storage and convenience. The packaged products are then moved to the Packaging stage for bulk transportation.

Finally, the packaged products are subjected to Cartooning, where they are placed into cartons for efficient distribution and retail handling. This sequential flowchart outlines the step-by-step progression of the production process, ensuring that each stage is completed before advancing to the next, with a focus on quality control at critical points.

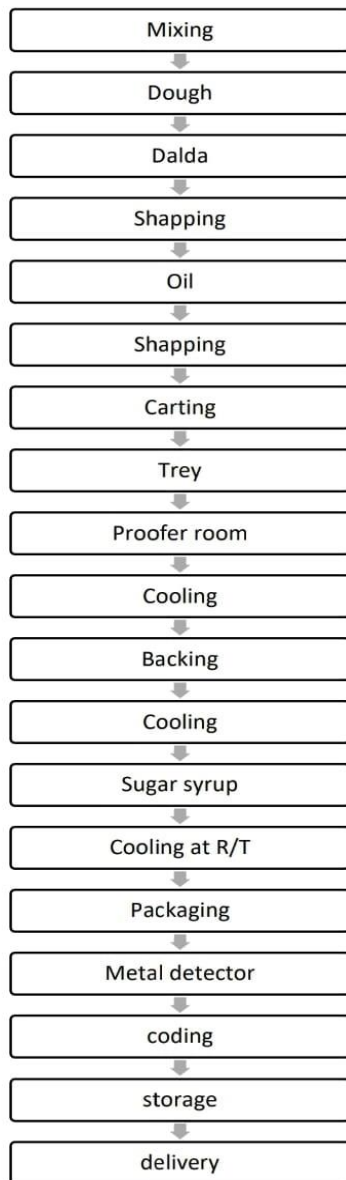
CHAPTER 3

CROISSANT

3.1 ALL TIME Honeycomb

Delicious bread coated in honey to satisfy your immediate cravings.

Process flowchart:



Description:

The production process for creating a baked product involves a series of meticulously coordinated steps, ensuring the quality and taste meet the desired standards. The journey begins with the precise mixing of ingredients, where flour, water, and other essential components come together to form a homogeneous dough. This dough is then carefully shaped into the desired form, often with the assistance of dalda or a similar ingredient to enhance texture and taste.

Following the shaping phase, the dough undergoes a crucial step involving oil application to impart a rich flavor and contribute to the product's overall quality. The shaped dough is then placed on trays and moved to a proofer room, allowing it to rise and attain the perfect consistency. Once the proofing is complete, the trays are transferred to the baking section, where the dough is subjected to high temperatures to achieve the desired texture and taste.

After baking, the products enter a cooling phase to stabilize their temperature and preserve freshness. This is followed by the application of sugar syrup, adding a sweet touch to the baked goods. The items then undergo another cooling phase at room temperature to solidify the syrup and enhance the overall quality.

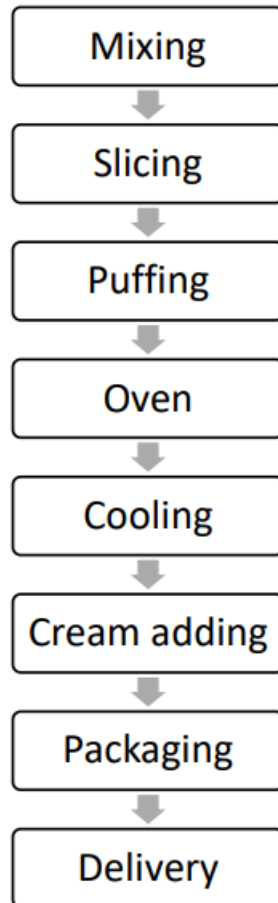
The next steps involve meticulous packaging, where the baked goods are sealed to maintain their freshness. Before packaging, each item passes through a metal detector to ensure product integrity. Subsequently, a coding process is implemented to label the products with essential information.

Once coded, the packaged goods are moved to storage, awaiting the final stage of the process—delivery. The products are dispatched to their destinations, ready to delight customers with their impeccable taste and quality. This comprehensive flowchart encapsulates the intricate journey from raw ingredients to the delivery of delectable baked goods, showcasing the precision and care involved in every step of the production process.

3.2 ALL TIME Choco Vanilla Bun

An adored chocolate-filled bun, brimming with delightful flavor. perfect for satiating your appetite while on the move.

Process flowchart:



Description:

The production process for a particular baked product unfolds through a well-coordinated sequence of steps, beginning with the thorough mixing of essential ingredients. This mixing phase ensures that components like flour, water, and other key elements blend seamlessly to form a uniform mixture. Following mixing, the prepared dough undergoes a slicing process, shaping it into distinct portions that will eventually become individual units of the final product.

The sliced portions then enter a puffing phase, where the dough is subjected to specific conditions to achieve a desirable texture and volume. Subsequently, the puffed dough moves into the oven, where it undergoes precise baking to attain the perfect level of crispiness and flavor. Once baked to perfection, the products enter a cooling phase, stabilizing their temperature and preserving their quality.

The next step involves adding a creamy touch to the baked goods. This cream addition phase introduces a layer of richness and flavor to enhance the overall taste experience. Following the cream application, the products progress to the packaging stage, where they are carefully sealed to maintain freshness and protect against external elements.

Once packaged, the final products are ready for delivery to customers. This delivery phase ensures that the meticulously crafted baked goods reach their intended destinations in optimal condition, ready to be enjoyed. In essence, this flowchart encapsulates the sequential journey from ingredient mixing to the delightful moment of product delivery, highlighting the precision and care involved at each stage of the production process.

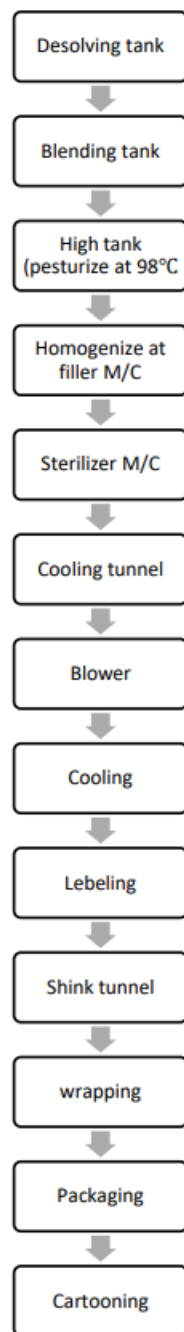
CHAPTER 4

POLYETHYLENE LINE

4.1 PRAN Lacchi

Lacchi from PRAN has a sweet and delectable taste.

Process flowchart:



Description:

The production journey for a specific product involves a meticulously organized series of steps, beginning with the desolving tank where essential ingredients are dissolved to form a cohesive mixture. From there, the mixture advances to the blending tank, where further integration and harmonization of components take place to achieve a uniform consistency.

The blended mixture is then elevated to a high tank, where pasteurization occurs at a precise temperature of 98°C, ensuring the elimination of potentially harmful microorganisms. Subsequently, the processed mixture moves on to the homogenization stage at the filler machine, where it undergoes a meticulous process to achieve a consistent texture.

Following homogenization, the product passes through a sterilizer machine, ensuring its cleanliness and safety. It then enters a cooling tunnel, where the temperature is regulated to stabilize the product before moving to the next phase. The cooled product is subjected to a blower to further enhance its temperature control and overall quality.

Next in line is the cooling phase, which prepares the product for subsequent stages of the production process. The labeled product then undergoes the labeling process, where essential information is applied for consumer awareness. Following labeling, the product moves through a shrink tunnel, facilitating the application of shrink wrapping for secure packaging.

The wrapped product enters the final packaging phase, where it is carefully packaged before progressing to cartooning. In the cartooning stage, the packaged products are organized and placed into larger cartons for efficient transportation and storage.

In essence, this comprehensive flowchart encapsulates the sequential journey of the product, from the initial mixing of ingredients to the final stages of packaging and cartooning. Each step in the production process is crucial, ensuring the product's quality, safety, and readiness for distribution to consumers.

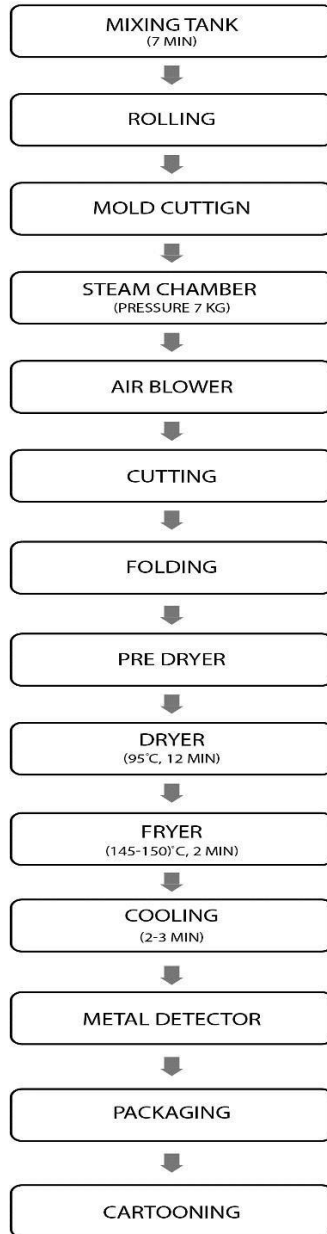
CHAPTER 5

NOODLES

5.1 Instant Noodles

PRAN produces the Mr. Noodles brand of instant noodles. Food items from PRAN included spice, ketchups and sauces, jams and jellies, and quick noodles. Instant noodles were the most widely consumed of them.

Process flowchart:



Description:

The production process for a specific product is a carefully orchestrated sequence of steps designed to ensure quality and consistency. It all starts in the mixing tank, where essential ingredients are blended for precisely 7 minutes to create a uniform mixture. Following this, the blended mixture undergoes a rolling process, and the resulting form is cut into molds.

The shaped product then enters a steam chamber under a pressure of 7kg, contributing to its unique texture. An air blower is employed to enhance the drying process, and the product undergoes cutting and folding stages to achieve its final shape. Moving on, the partially dried product enters a pre-dryer to further reduce moisture content before progressing to the main drying stage.

In the main dryer, the product is exposed to a temperature of 95°C for 12 minutes, ensuring thorough drying. Following the drying process, the product undergoes a brief frying stage at a temperature range of (145-150) °C for 2 minutes to achieve the desired crispiness. After frying, a short cooling period of 2-3 minutes is introduced to bring the product to a suitable handling temperature.

Subsequently, the product passes through a metal detector to ensure product integrity and safety. The final steps involve meticulous packaging, where the product is securely sealed, and cartooning, organizing packaged products into larger cartons for efficient storage and transportation.

In summary, this detailed flowchart outlines the sequential progression of the product from the initial mixing phase to final packaging, with essential steps such as drying, frying, and cooling carefully integrated. Each stage plays a crucial role in shaping the product's quality, resulting in a consistent and well-prepared final product ready for distribution.

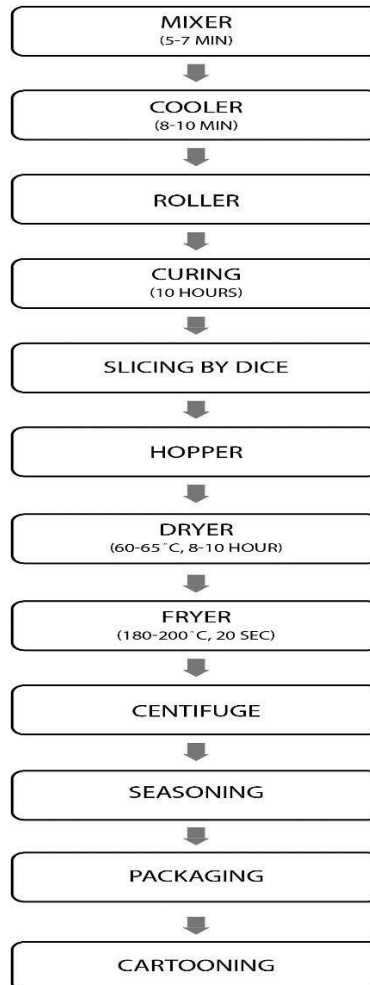
CHAPTER 6

CHIPS

6.1 Zeros Chips

Pran Zeros Onion Flavour Chips are crafted with only the finest ingredients to provide each crispy ring the most delightful onion flavour possible.

Process flowchart:



Description:

The production process for a specific product involves a systematic sequence of steps, ensuring precision and quality at each stage. The journey commences in the mixer, where essential ingredients are blended for a duration of 5-7 minutes to create a well-mixed mixture. Following this, the mixture enters the cooler, where it is exposed to a cooling process lasting 8-10 minutes to achieve the desired temperature.

The cooled mixture then progresses to the roller, shaping it into the desired form. Subsequently, the product undergoes a curing phase lasting 10 hours, contributing to its final texture and taste. After curing, the product is sliced into dice shapes, and the diced pieces move to a hopper for further processing.

The product enters a dryer set at a temperature of (60-65) °C for 8-10 hours, ensuring thorough drying. Following the drying process, the dried product advances to a fryer, where it is subjected to temperatures ranging from (180-200) °C for 20 seconds, achieving the desired level of crispiness.

After frying, the product undergoes centrifugation to remove excess oil, enhancing its overall quality. The seasoned product is then carefully packaged to preserve its freshness and flavor. Finally, the packaged products are organized into larger cartons in the cartooning stage, facilitating efficient storage and transportation.

In summary, this comprehensive flowchart outlines the step-by-step progression of the product from mixing to final packaging, incorporating essential stages such as cooling, curing, drying, frying, and seasoning. Each phase contributes to the creation of a consistent and well-prepared final product ready for distribution to consumers.

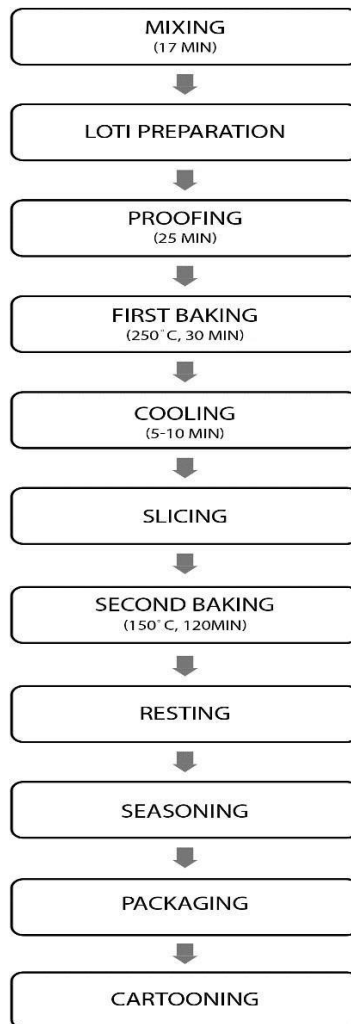
CHAPTER 7

BISCUITS

7.1 PRAN Special Toast

PRAN Toast is made with the finest wheat and is of the highest quality. Delicious & Crispy.

Process flowchart:



Description:

The production process for a specific product is intricately planned to ensure that each stage contributes to the excellence and taste of the end product. It all begins with the mixing phase, where vital ingredients are blended for a duration of 17 minutes, resulting in a uniform mixture. Following this, the mixture undergoes loti preparation, establishing the groundwork for subsequent phases.

Loti preparation leads to a 25-minute proofing phase, allowing the product to rise and achieve the desired texture. After proofing, the product undergoes its initial baking at a high temperature of 250 °C for 30 minutes, ensuring the development of an initial crispiness and flavor.

Following the first baking, the product undergoes a cooling phase lasting 5-10 minutes, stabilizing its temperature and maintaining its quality. Slicing follows, preparing the product for its second baking. The sliced pieces then go through the second baking phase at a lower temperature of 150 °C for a more extended period, specifically 120 minutes.

After the second baking, the product enters a resting phase to cool and set, allowing its flavors to mature. Seasoning is then introduced to enhance the taste profile. The seasoned product is carefully packaged to preserve its freshness and quality. Finally, the packaged products are arranged into larger cartons during the cartooning stage, streamlining storage and transportation.

In summary, this comprehensive flowchart delineates the step-by-step progression of the product from mixing to final packaging, integrating critical stages such as proofing, baking, cooling, slicing, seasoning, and cartooning. Each phase is integral to shaping the product into a consistent and flavorful final form, ready for distribution to consumers.

CHAPTER 8

QUALITY ASSURANCE CRITERIA AND TESTING

8.1 Quality Assurance Criteria and testing

Tests	Parameters
PCL (Wafer)	
Moisture analyzing	Differs based on the product.
Hardness Test	Differs based on the product.
Sealing test	Differs based on the product.
High performance liquid chromatography	Differs based on the product.
PE (PRAN Lacchi)	
Brix Test	12.8
Acidity Test	0.23
Filling Temperature	70-85 °C
Homogenization	190-220 rpm
Pasteurization	98+/-2 °C
Water Pressure for Bottle Cleaning	2.5 PSI
Sugar Content Analysis	12.8
Quality Assessment of Incoming Raw Milk	
Density measurement	1.025 to 1.035 g/cm ³
Clot on Boiling test	
PH Test	6.7 to 6.9
BR	40-45
Analysis of Dairy Processing	
Alcohol	0.16%

Soda test	Differs based on the product.
Formation test	Differs based on the product.
Acidity test	6.6-6.8%
Starch test	12.0%
Sugar test	Differs based on the product.
Salt test	Differs based on the product.
Glucose test	80-590mg/dL
Fat test	3.5%
Biscuit and Bakery	
Moisture	Differs based on the product.
Fat	Differs based on the product.
Insoluble ash	Differs based on the product.
Acidic soluble ash	Differs based on the product.

CHAPTER 5

CONCLUSION

5. Conclusion

Throughout a 15-day internship at the Habiganj Industrial Park, I had the opportunity to gain insights into both the quality control and production divisions. PRAN holds a significant position in Bangladesh's food industry, and the internship focused on various production lines. Specific protocols such as Cleaning in Place (CIP) and Standard Operating Procedure (SOP) tailored to individual lines. My observation spanned the entire production process, encompassing activities from raw material acquisition to the manufacturing of items. This included procedures such as the storage of raw materials, reduction, processing of raw materials, mixing, maturation, processing, storage, disposal of waste, recombination, quality assurance (QA), and additional steps. Quality monitors apply specific measures at different phases, guaranteeing the excellence of manufacturing before, during, and following the production process for each designated production line. Examinations like pH testing, assessment of hardness, iron content analysis, chlorine examination, and evaluation of Total Dissolved Solids (TDS) are performed to ensure the excellence of potable water. The quality tests for dairy products and carbonated soft drinks products differ only in the standard values applied to the same tests for different commodities. In summary, my internship at Habiganj Agro Limited Unit proved to be exceptionally fulfilling. I feel grateful to have been part of a company that is both dedicated and forward-thinking. Working with them has been a valuable experience, and I believe the expertise and insights I've acquired will be beneficial in my upcoming endeavors.

REFERENCES

The Largest Grower & Processor of Fruits & Vegetables in Bangladesh - PRAN Foods Ltd. (n.d.). Retrieved November 28, 2014, from <http://www.PRANfoods.net/>

PRODUCTION AND QUALITY CONTROL OF PRAN-RFL GROUP AT HABIGANJ AGRO LIMITED

ORIGINALITY REPORT

8%

SIMILARITY INDEX

6%

INTERNET SOURCES

0%

PUBLICATIONS

8%

STUDENT PAPERS

PRIMARY SOURCES

1

www.coursehero.com

Internet Source

2%

2

Submitted to Daffodil International University

Student Paper

2%

3

Submitted to Columbus State University

Student Paper

1%

4

maksudurrahmanblog.wordpress.com

Internet Source

1%

5

dspace.daffodilvarsity.edu.bd:8080

Internet Source

1%

6

hra.1506tvsupercheap.fun

Internet Source

<1%

7

Submitted to North South University

Student Paper

<1%

8

doczz.fr

Internet Source

<1%