INTERNSHIP IN PRODUCTION AND QUALITY CONTROL AT AKIJ FOOD & BEVERAGE LTD

INTERNSHIP REPORT

BY

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ID: 201-34-297

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

The project titled **" Internship Report on Production and Quality Control of "Akij Food & Beverage Ltd" "** presented by **Md. Forkan Sikder** to the Department of Nutrition and Food Engineering at Daffodil International University, has been deemed acceptable for the partial fulfillment of the requirements for the B.Sc. degree in Nutrition and Food Engineering. It has also been approved for its style and content.

Dr. Nizam Uddin

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DECLARATION

We hereby announce the successful conclusion of this research, conducted under the guidance of **Dr. Md. Mahbubur Rahman**, Associate Professor and **Md. Harun-Ar Rashid**, Assistant Professor in the Department of Nutrition and Food Engineering at Daffodil International University. Furthermore, we confirm that neither this study nor any part of it has been presented for evaluation for any degree or certificate elsewhere.

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ACKNOWLEDGEMENT

I would like to begin by expressing my heartfelt gratitude to the Almighty for His divine blessings, which made the successful completion of the final year project possible.

I extend my sincere thanks to my supervisor, **Dr. Md. Mahbubur Rahman**, Associate Professor in the Department of Nutrition and Food Engineering at Daffodil International University, for his steadfast guidance during my organizational attachment. Without his direction and invaluable support, preparing this report would have been an immensely challenging task.

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I also thankful to **Mr. Md. Kawser Islam Mithu,** Manager, Operation of Akij Food & Beverage Company Ltd, and **Md. Atiqur Rahman Joni**, Executive, Production, Akij Food & Beverage Company Ltd, for their cooperation during my internship program at Akij Food & Beverage Company Ltd.

EXECUTIVE SUMMARY

Akij Group first entered the market more than fifty years ago. The company was founded in the 1950s by its late founder and longtime chairman, Late Mr. Sheikh Akij Uddin, with the introduction of a single cigarette brand called Akij Biri. One of the largest and most recognizable divisions of the Akij Group is this brand. In 2006, Akij Food & Beverage began its adventure. Tobacco, jute mills, cement, particle board, housing, textile, ceramics, zarda, and match are just a few of the industries in which AKIJ GROUP currently operates more than 18 business units. The product line of Akij Food & Beverage is extensive and includes milk, energy drinks, various juices, chips, and numerous kinds of cold drinks. Akij established a robust network across the entire nation in order to sustain this extensive product line. Additionally, Akij's HR is qualified and specialized to implement a variety of methods to win a sizable piece of the market. To keep their present market share and take market share from competitors, Akij Food & Beverage organizes a variety of exciting promotional activities. Because Akij Food & Beverage operates under the auspices of Akij Group, one of the largest firms in Bangladesh, it received additional facilities in this situation. The complete research is cleverly separated into three sections. The first section discusses pertinent information and accurate company formation for Akij Food & Beverage Ltd (AFBL). AKIJ GROUP, the company's parent, as well as its business, functional, and operational units, are discussed in general terms. AFBL's overview, a SWOT analysis, and a competitive analysis were all included in the second section. The third section entails a thorough examination of my research work, formatted in accordance with study Speed & its Branding Strategy (Speed Track Master Racing), hypotheses, and data presentation and analysis, hypothesis testing, research findings summary, etc. On this segment, I'm also compiling the derived suggestion portion of my research.

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CHAPTER 1

INTRODUCTION

1.1 All about AFBL Group

The Akij Food and Beverage Ltd. (AFBL) journey began in that year. AFBL produces a wide variety of snacks and drinks for both domestic and foreign markets. The parent business Akij Group launched AFBL as a $70 million project.

AFBL is a component of the 1950-founded Akij Group, which Sk. Akij Uddin established. The most recent figure for this industry group is 26, and it is continuously expanding. More than 50,000 people work for these units. There have already been 25 significant national accomplishments. Sk. Shamim Uddin is the Director of AFBL, while Sk. Nasir Uddin serves as the group's Chairman and Managing Director. One of the top food and beverage producers in the nation, AFBL produces a variety of foodstuffs for both domestic and foreign markets, including fruit drinks, carbonated beverages, and other foods. It exports goods to 26 different nations, demonstrating its strong global presence.

By constantly creating high-quality goods with modern technology, empowered, and motivated personnel, AFBL aspires to be a sustainable business that benefits society. With a wide variety of products, including soft drinks, fruit drinks, energy drinks, molted drinks, drinking water, milk and milk-based products, chips, mango bars, and pickles.

Over the years, AFBL has received numerous awards and certifications. It has four times won the Best Brand Award. The company's quality is attested to by national and international certifications as **BSTI, HALAL, ISO, and HACCP**. With locally manufactured and imported raw ingredients, as well as cutting-edge machinery imported from well-known companies like Tetra Pak, Krones, Alfa Laval, Spa, etc., AFBL creates the highest quality food products.

In 2000, AFBL began doing business. With a well-established brand, AFBL is currently Bangladesh's top beverage company. With more than 7000 direct employees and 25000 indirect employees, AFBL has more than 1300 distributors across the entire country of Bangladesh. In Dhamrai, Dhaka, Bangladesh, AFBL owns a 65-acre facility.

Objective of the Report

According to me, the report's purpose can be divided into two categories:

General Objective

The goal of this internship report is to complete the prerequisites for the Bachelor of Nutrition and Food Engineering (NFE) degree in the Faculty of Allied Health Sciencof Daffodil International University. And I'm putting my project report in writing for this report.

Specific Objective

This education gave me both theoretical and practical abilities. First and foremost, I've learned more about one of the country's largest consumer goods producers. Additionally, it has helped me network inside the corporate environment.

The goals of the internship program and the study are to:

- Gain an understanding of the activities of the AFBL Group
- Watch the plant's different products being processed.
- To be familiar with the laws and regulations that govern the sector.
- To be familiar with the labor union for the sector.

Mission

The "Mission" is the sense of purpose that outlines how an organization realizes its "vision." Will work to be a sustainable business through, states the purpose of AFBL.

- Consistently high-quality goods.
- An empowered and motivated employee.
- Modern technology is one of these.
- A society that gains.

Vision

To uphold a dedication to quality, become the most reputable food and beverage company in Bangladesh. Here is a brief explanation of the AFBL Vision.

Values

"Values" are the responses to the question of how they wish to behave in order to fulfill their goal and move closer to realizing their vision. Their principles are:

- Originality.
- Cooperation.
- Honesty.

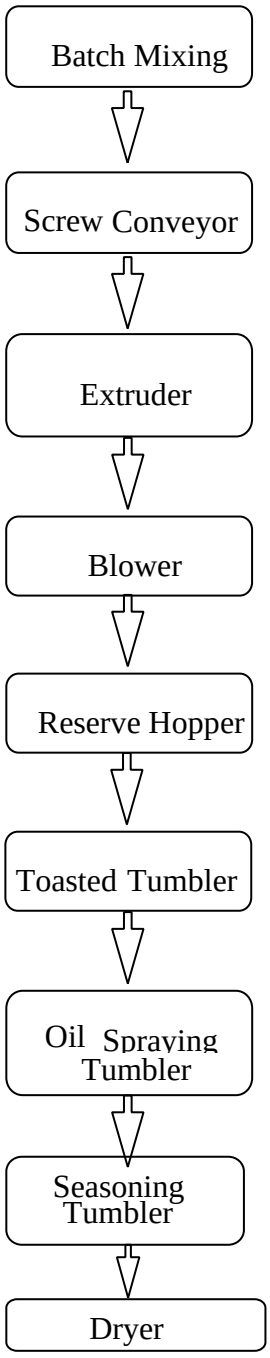
CHAPTER 2

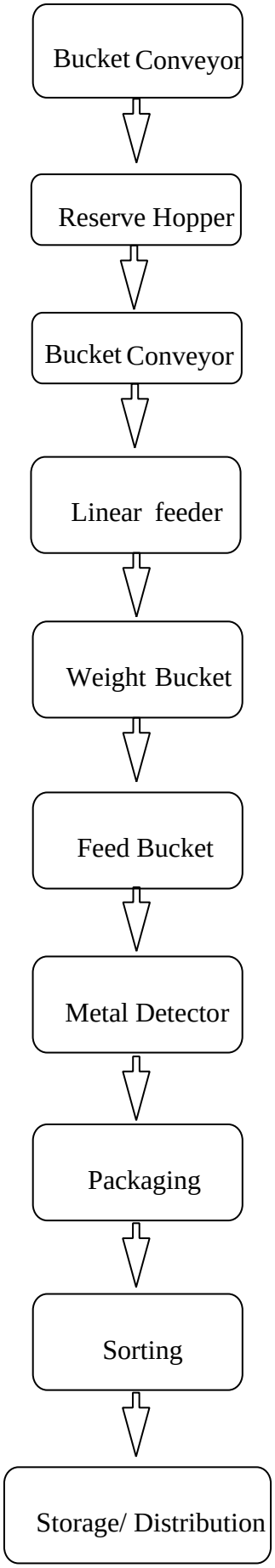
CHEESE PUFFS

2.1 Introduction

Chess Puff is a creative and delicious pastry that brings a distinctive twist to the conventional culinary scene. Made up of layers of crispy puff pastry interlaced with a delicious checkerboard design, this dessert is a masterful union of flavor and creativity. A symphony of flavors is created for the palate by the contrast of rich, savory contents with light, airy pastry. Chess Puff is a wonderful dessert that is visually beautiful and incredibly gratifying, making it a monument to culinary creativity. Chess Puff stands out in the world of pastries with its beautiful design and mouthwatering ingredients. It promises a pleasurable experience for pastry aficionados who want to add a bit of refinement to their sweet indulgences.

2.2 Flow Chart of Cheese Puffs Manufacturing




Bucket Conveyor
Reserve Hopper
Bucket Conveyor
Linear feeder
Weight Bucket
Feed Bucket
Metal Detector
Packaging
Sorting
Storage/ Distribution

2.3 Gluten Test of Cheese Puffs

2.3.1 Objective:

Gluten is a protein found in wheat flour that is frequently utilized in both store-bought and homemade foods. Gluten aids in dough's rise, shaping, and chewiness.

2.3.2 Instruments:

- Electric balance.
- Petri dish.
- bowl.
- Petri dish.
- Dryer.

2.3.3 Ingredients:

- Water 15 ml
- Flour 25 g

2.3.4 Procedure:

- Set up a balancing machine and tare the weight of a dish.
- Place a sample of 25 g on the dish. Observe the weight.
- 3.Put the sample in a bowl 3. Fill the basin with 15 cc of water. and create a flawless dough.
- Leave the dough to stand in a beaker of water for an hour.
- Transfer the dough to a sieve after one hour.
- Use just tap water to thoroughly wash the dough**.**
- Determine the weight of a dry, clean, Petri dish made of glass.
- Break up the gluten into little pieces and cover the Petri dish with it.
- For two hours, dry the gluten in a hot air oven at 133°C.
- After drying, let the gluten cool in a desiccator. Then, weigh the dish with the dried gluten and record the weight.

2.3.5 Calculation:

Wet basis,
Sample weight (Ws) = 25 g
Dish weight (W1) = 45.04 g
Dish+ Gluten weight(W2) = 49.10 g

(W2 - W1) Ws 100 = (49.10 - 45.04) 25 100 = 16.24% Gluten (%) As a result, flour contains 16.24% gluten.

CHAPTER 3

SUGAR PROCESSING PLANT

3.1 Introduction

Making premium sugar syrup to satisfy the demands of the beverage sector is the main justification for building a sugar processing plant. in order to boost output, keep up a steady level of product quality, and follow industry standards.The processes used in the production plant for extracting, purifying, and crystallizing sugar are optimized.In order to encourage the expansion of the beverage industry, the facility makes use of cutting-edge technologies.methods and technologies for sustainable business. The facility seeks to support the effective manufacture of drinks that are accessible to customers worldwide.

3.2 Ingredient

Raw Sugar

Various countries supply the raw sugar needed in sugar processing plants. including Bangladesh and India. Among Bangladeshi businesses, fresh, Igloo, and Teer sugar are all used. Additionally, some Indian businesses use sugar in their sugar processing facilities.

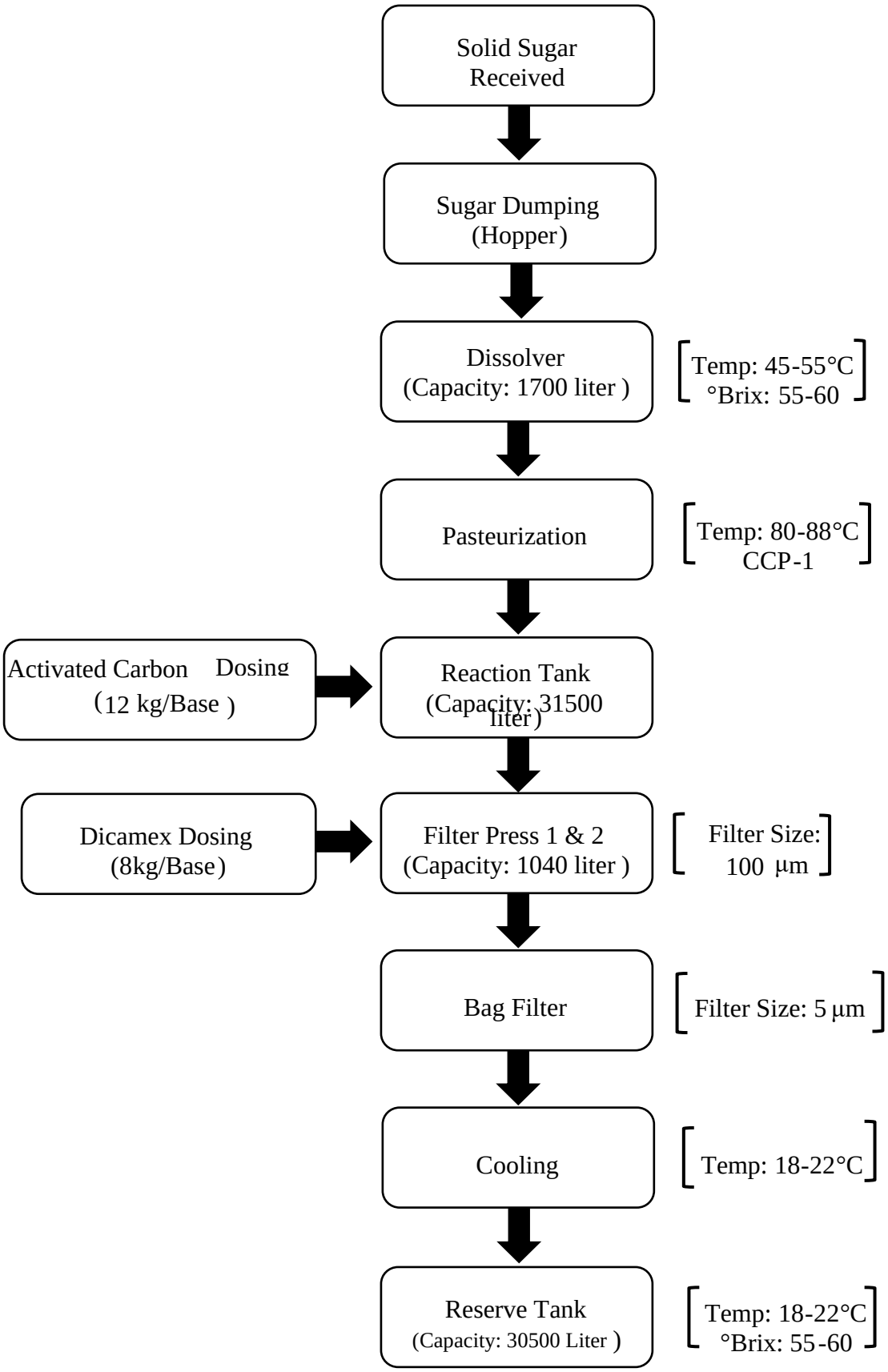
Activated Carbon

A sugar processing facility uses activated carbon to efficiently remove contaminants, colorants, and unfavorable tastes from sugar solutions. A potent adsorbent, activated carbon draws and binds these undesirable chemicals to its porous surface. As a result, sugar products are cleaner, clearer, and more aesthetically pleasing and exceed the high standards of quality demanded in the food and beverage sector.

Dicamex powder

Dicamex powder is utilized in sugar processing plants as a flocculant and clarifying agent. Dicamex powder facilitates their sedimentation or filtration, resulting in a clearer and purer sugar syrup. This process enhances the overall quality of the sugar produced, leading to improved crystallization, reduced losses, and higher yields in the subsequent refining stages.

3.3 Flow chart of sugar prossing plant



3.4 Quality Parameters of Sugar Syrup

- Purity Test
- Brix Test
- Clarity Test
- Tests for taste, odor, and appearance (T. O. A.)

3.5 Clarity Test of Sugar Syrup by Vacuum Filter:

Instruments:

- Filter paper
- a vacuum pump
- Buchner flask
- Buchner spout

Ingredients:

• Water
• Sugar syrap as sample

Procedure:

- First, we gather the necessary materials, including the filter paper and Buchner funnel, as well as the 50 ml of sugar syrup, 200 ml of treated water, and other necessary tools.
- In the Buchner funnel, we then add sample and treated water.
- Next, start the vacuum pump.
- The filter paper will let through the water and syrup.
- We have to wait until the problem is solved.
- The filter paper will be removed once the filtering procedure is finished.
- Finally, we meticulously scrutinize any particles that may still be present.

3.6 Test Name: Brix analysis by Hand Refractometer:

Instruments:

- Tissue paper
- Dropper
- Hand refractometer

Ingredients:

• Liquid sample (Sugar syrup)

Procedure:

- Verify that the hand refractometer is spotless and calibrated correctly in accordance with the manufacturer's instructions.
- Apply a few drops of the liquid sample (sugar syrup) to the refractometer's prism surface using a dropper. Prevent air bubbles. To ensure that the liquid is distributed evenly and completely covers the prism, close the daylight plate.
- Until the scale and boundary line are visible via the eyepiece, adjust the instrument's focus.
- Where the boundary line crosses the scale, read it. The sample's °Brix value is represented by this reading.
- Note the°Brix value

3.7 Purity test of RAW Sugar

Instrument:

- Beaker
- Weight Balance
- Digital Refractometer
- Required Resources
- 80 ml of water
- 20 g of raw sugar

Procedure:

- First, we gather raw sugar and distill water to make a 20% sugar solution.
- Next, we add 80 ml of distill water and 20 g of sugar to a beaker.
- We then successfully combined water and sugar. We can use a magnetic stirrer for 10 minutes to get the best results.
- After that, we gather the dissolved solution and place a sample of two-thirds of a drop into the digital refractor.
- A wait the Result.

3.8 Calculation:

Take the result of the digital refractive index, which is 19.76 °Brix.

So,

°Brix is 19.76 for a 20 gram solution.

⇨1 gram of solution has a °Brix of 19.76.

20

⇨°Brix is 19.76 1 100 for a 100 gram solution.

20

= 98.8%

So, 98.8% of raw sugar is purity.

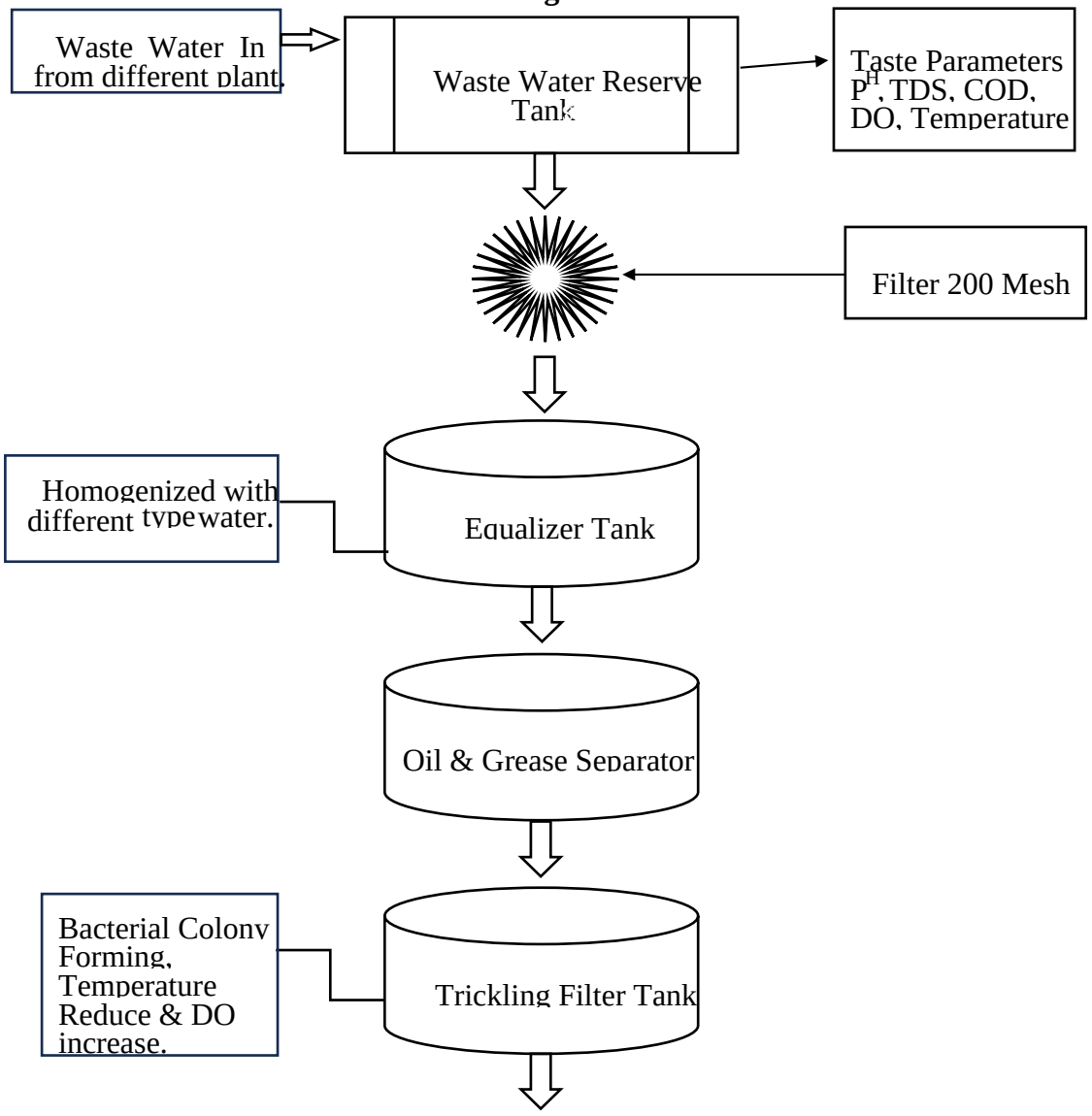
CHAPTER 4

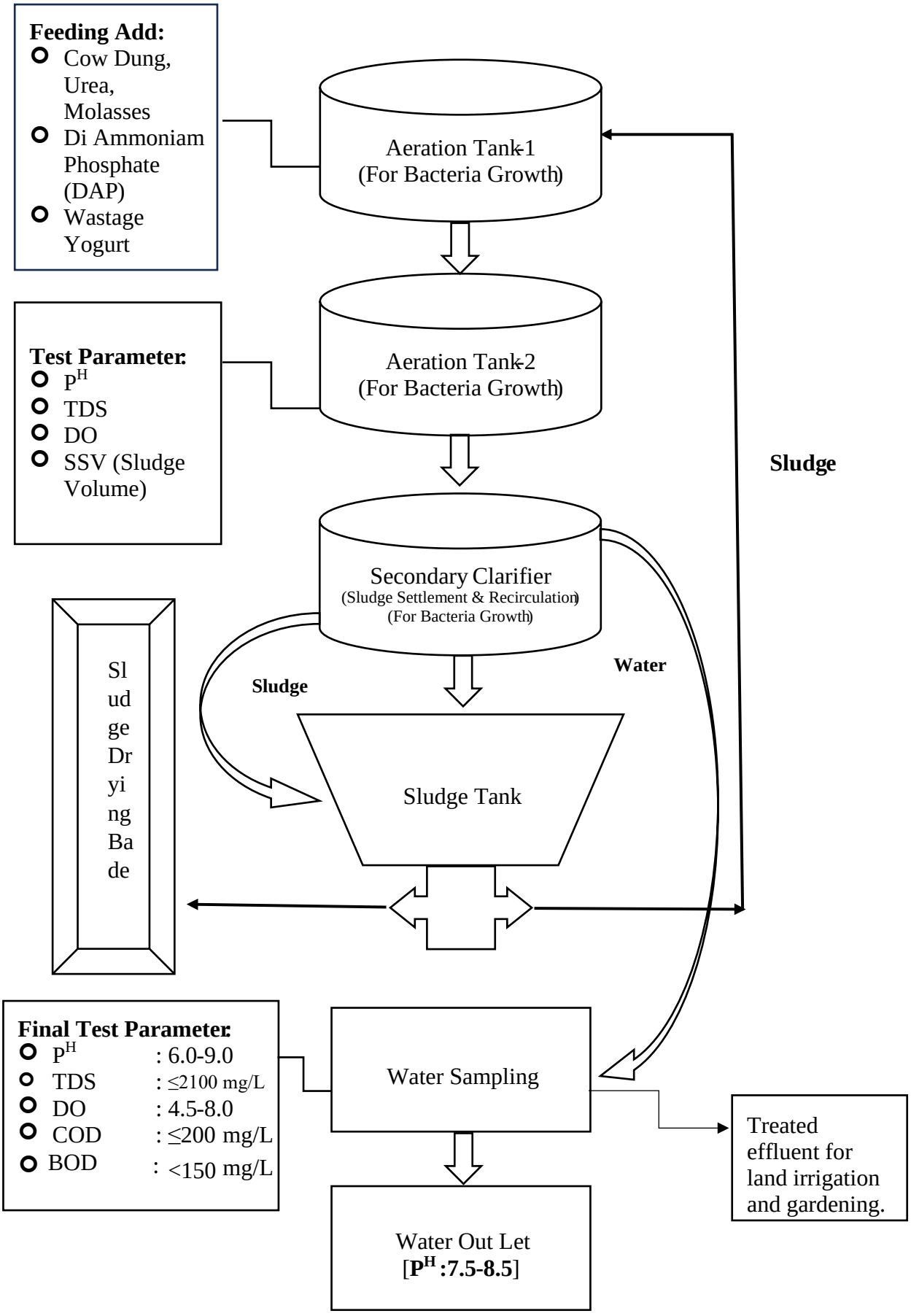
EFFLUENT TREATMENT PLANT

4.1 ETP Plant

The Effluent Treatment Plant, also known as an ETP, is one sort of wastewater treatment technique that is especially made to clean industrial wastewater for reuse and has the goal of releasing safe water to the environment while mitigating the negative effects of the effluent. A specific type of treatment technique called ETP is needed because industrial wastewater contains a variety of pollutants. In order to treat wastewater from diverse industrial sectors, such as chemicals and pharmaceuticals, the ETP Plant uses a variety of physical, chemical, biological, and membrane processes that operate at different levels. pharmaceutical, refineries, dairy, ready mix plants, and textiles, among other industries.

4.2 Flow Diagram of ETP




Feeding Add:
Cow Dung, Urea, Molasses
Di Ammoniam Phosphate (DAP)
Wastage Yogurt
Aeration Tank-1
(For Bacteria Growth)
Test Parameter:
PH
TDS
DO
SSV (Sludge Volume)
Aeration Tank-2
(For Bacteria Growth)
Sludge
Secondary Clarifier
(Sludge Settlement & Recirculation)
(For Bacteria Growth)
Water
Sludge
Sludge Drying Bade
Sludge Tank
Final Test Parameter:
PH : 6.0-9.0
TDS : ≤2100 mg/L
DO : 4.5-8.0
COD : ≤200 mg/L
BOD : <150 mg/L
Water Sampling
Treated effluent for land irrigation and gardening.
Water Out Let
[PH :7.5-8.5]

4.3 Quality Parameters of ETP Plant

- DO Test: Doing by DO digital machine.
- PH Test: Doing by PH meter.
- TDS Test: Doing by TDS machine.
- COD Test
- BOD Test

4.4 COD Test:

Apparatus:

- Burettes
- Pipettes
- COD reactors
- Flask

Required Chemical:

- Sulfuric acid, first
- Potassium dichromate
- Ferroin indication
- ferrous ammonium sulphate
- Sample

Procedures:

- In a flask, combine 1.5 ml K2Cr2O7, 3 ml 50% H2SO4, and 2.5 ml sample.
- Ensure correct blending.
- Shake the entire mixture and let it sit for 15 to 20 minutes.
- For two hours, heat them at 150 °C.
- After that, let them there for 40 minutes at room temperature.
- Next, utilize Ferrin indicators for titration using Ferus sulfate.
- Then calculate the burette reading.

Formula:

$Blank\ COD - Sample\ COD \times 8000 \times Normality\ of\ Fe\ (Fe2SO4)$

$2.5\ ml$

4.5 BOD Test:

Procedures:

- Pour 450 ml of wastewater sample plus 5-7 drops of nitrification inhibitor into the test tube.
- Next, add 50ml, or two-thirds of a plate, of NaOH.
- Programming the BOD checking device.
- Set the mixture aside for five days.
- Next, confirm the outcome.

CHAPTER 5
CARBONATED SOFT DRINKS PLANT (CSD)

5.1 Introduction

Water, sugar, and either artificial or natural flavoring are the main ingredients of soft drinks: As sweeteners, you can use sugar, high fructose corn syrup, fruit juice, a sugar substitute, or any combination of these. Soft drinks may also contain caffeine, colorings, preservatives, and/or other additives.

Soft drinks can be served chilled, over ice, or at room temperature. They are available in many different packaging forms, including as cans, glass bottles, and plastic bottles. There are many various sizes of containers, ranging from little bottles to large multi-liter ones.

Carbonated drinks or fizzy drinks are defined as beverages that contain dissolved carbon dioxide. When CO is dissolved in a liquid, effervescence or fuzz is produced. The process typically makes use of carbon dioxide under great pressure. As the pressure is released, tiny carbon dioxide bubbles are expelled from the solution. This causes the solution to bubble up or become effervescent. A common example is the breakdown of carbon. By adding carbon dioxide, water becomes carbonated. Because carbon dioxide only sometimes dissolves in water, when pressure is released, it separates as a gas.

Sweet, non-alcoholic effervescent fluids without alcohol typically make up carbonated soft drinks. The most popular AFBL-made carbonated soft drink brands include Speed, Mojo, Clemons, Twinges, etc.

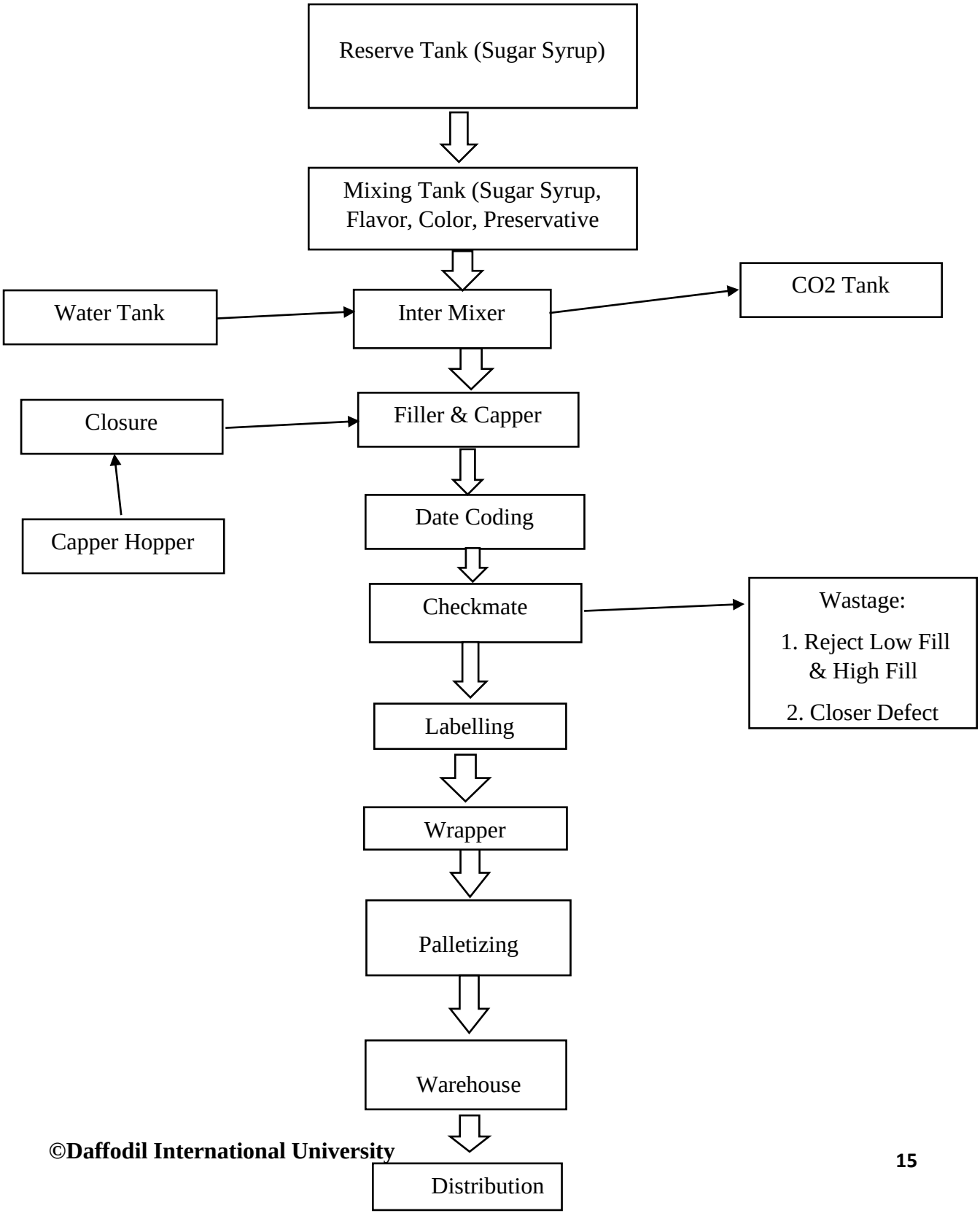
CSD (Carbonated Soft Drinks) Plant

Carbonated Soft Drinks Items:

- Speed (250ml)
- .Mojo (250ml, 500ml, 1ltr, 2ltr)
- Naga Mojo (250ml)
- Clemon (250ml, 500ml, 1ltr, 2ltr)
- Lemu (250ml) 6. Wild Brew (250ml)
- Twing (250ml, 500ml)
- Houston (250ml) 9. Tarbo (250 ml)

5.2 Flow Chart of CSD 4 & 5

Carbon dioxide is a great choice for use in CSD products as it easily absorbs into a liquid including soft drinks to form tiny bubbles. The CO2 also serves as a protective measure that keeps the soft drink fresh andprevents the growth of bacteria in the liquid while stored



5.3 Required Test for CSD Plant

5.4 Tests of Carbonated Soft Drinks

- Gas volume
- Torque
- °Brix
- SST

5.5 Determination of Beverage %Brix

Required Equipment:

- Beaker
- Digital refractometer

Test Procedure:

- Pour a sample of a beverage into a beaker first.
- By adding a magnetic bar to a beaker, appropriately removing CO2 from the beverage sample, then removing the magnetic bar from the beaker with a magnetic stirrer.
- Or correctly shaking the beverage sample to eliminate the CO2.
- Let the refractometer's sample chamber open.
- Add a few drops of sample to the sample chamber of the refractometer.
- Use a refractometer to measure the sample brix as a percentage.

5.6 Determination of Beverage Bottle Opening Torque

Required Equipment:

- Take a sample bottle from the filling line immediately after it has been filled, according to the capper head count.
- Properly closed the stopper and positioned the bottle base on the torque tester. This keeps the bottle from turning when a torque is applied, as opposed to the cap.
- Set the torque tester to zero to eliminate any torque that was registered while the bottle was being placed.
- Rotate the cap counterclockwise to release the closure.
- Convert the opening torque reading to pounds per inch.

5.7 Determination of Secure Seal Test (SST)

Required Equipment:

- Secure Seal Tester

Test Procedure:

• Take a sample bottle from the line immediately following filling in accordance with the capper head count.

• Just at the gate point of closure, punch and adjust the pin using a sample bottle.

• Secure it using the provided special clamp.

• Join the sampling device to the measurement head. Place the sample in the water tank, then cover the machine. Please verify that the cover is securely fastened.

• Set the selector to TEST and check the pressure gauge for a test pressure of 150 psi. • After applying 150 psi of pressure, place the bottle under observation for a minute to look for bubbles.

• If a bubble is seen, it means the test was a failure; otherwise, it means the test was a success.

• Change the selector to VENT, then remove the bottle from the tester.

5.8 Determination of Gas Volume (GV)

Required Equipment:

- CO2 Tester
- Carbonation Calculator

Procedure:

- After the filling, take a sample of a blown bottle.
- Gently invert line samples for 20 seconds (do not shake) to equilibrate them.
- Make necessary bottle adjustments at the CO2 tester
- By opening the sniffling valve, surplus air pressure in the headspace is released, ensuring that only dissolved CO2 is detected and that the device is adequately shaken to achieve maximum constant pressure.
- Convert the thermometer reading to degrees Fahrenheit (°F) and the pressure reading to pounds per square inch (psi).
- Calculate CO2 volume by utilizing a carbonation calculator to convert pressure and temperature to a CSD snipt chart.

5.9 Determination of Net Content

Required Equipment:

- Digital Balance Meter

Test Procedure

- Take a sample bottle from the line right after it has been filled, taking note of the number of filling valves, and weigh each bottle's gross weight using a digital balance meter.
- After taking into account net weight, apply the formula.
- Following the suggested formulation, measure net content.

5.10 Calculation:

Gross weight: 277.60 gm

Tare Weight = Gas volume * SKU * CO2 density + Preform weight + Closure weight = 4.4 * 0.250 * 1.9647 + 15.2 + 2.25

= 19.611 gm

Net weight is the sum of the gross weight and the tare weight.

=277.60- 19.611

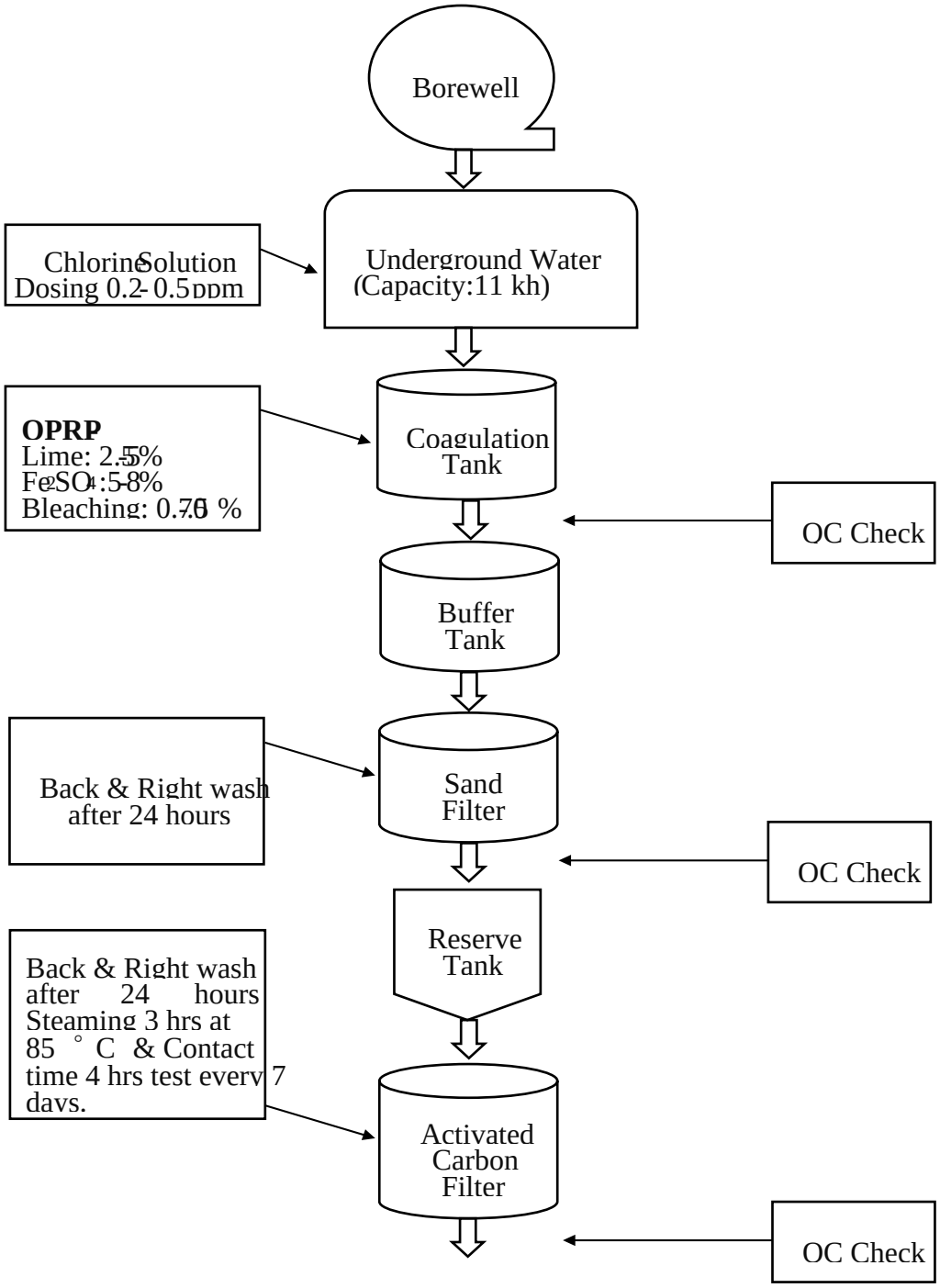
=257.989 gm

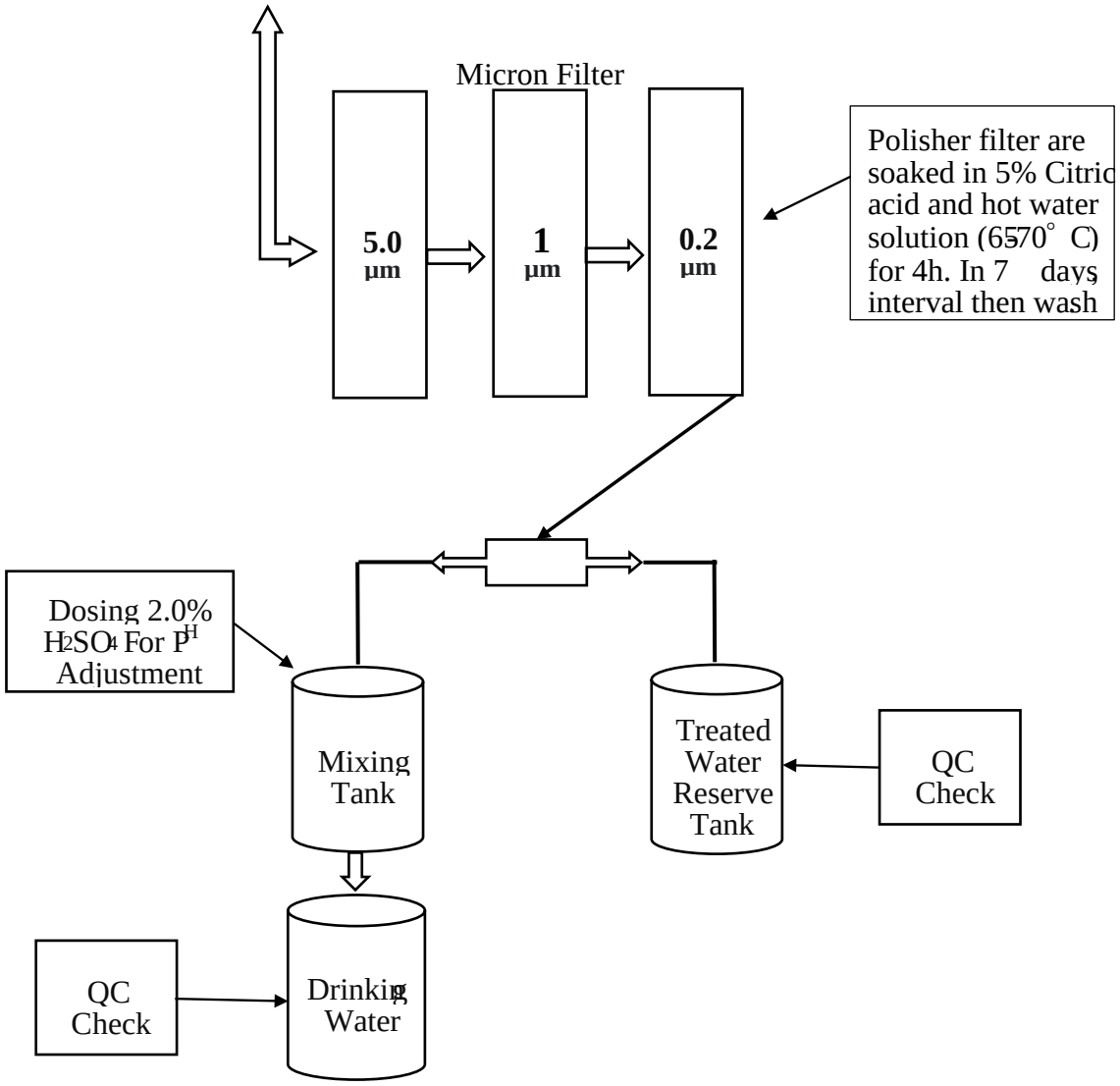
Specific gravity: =257.989/1.04

CHAPTER 6
WATER TREATMENT PLANT

Water treatment facilities may add one or more chemical disinfectants (such chlorine dioxide, chloramine, or chlorine) to the water after it has been filtered in order to eradicate any leftover bacteria, viruses, or parasites.

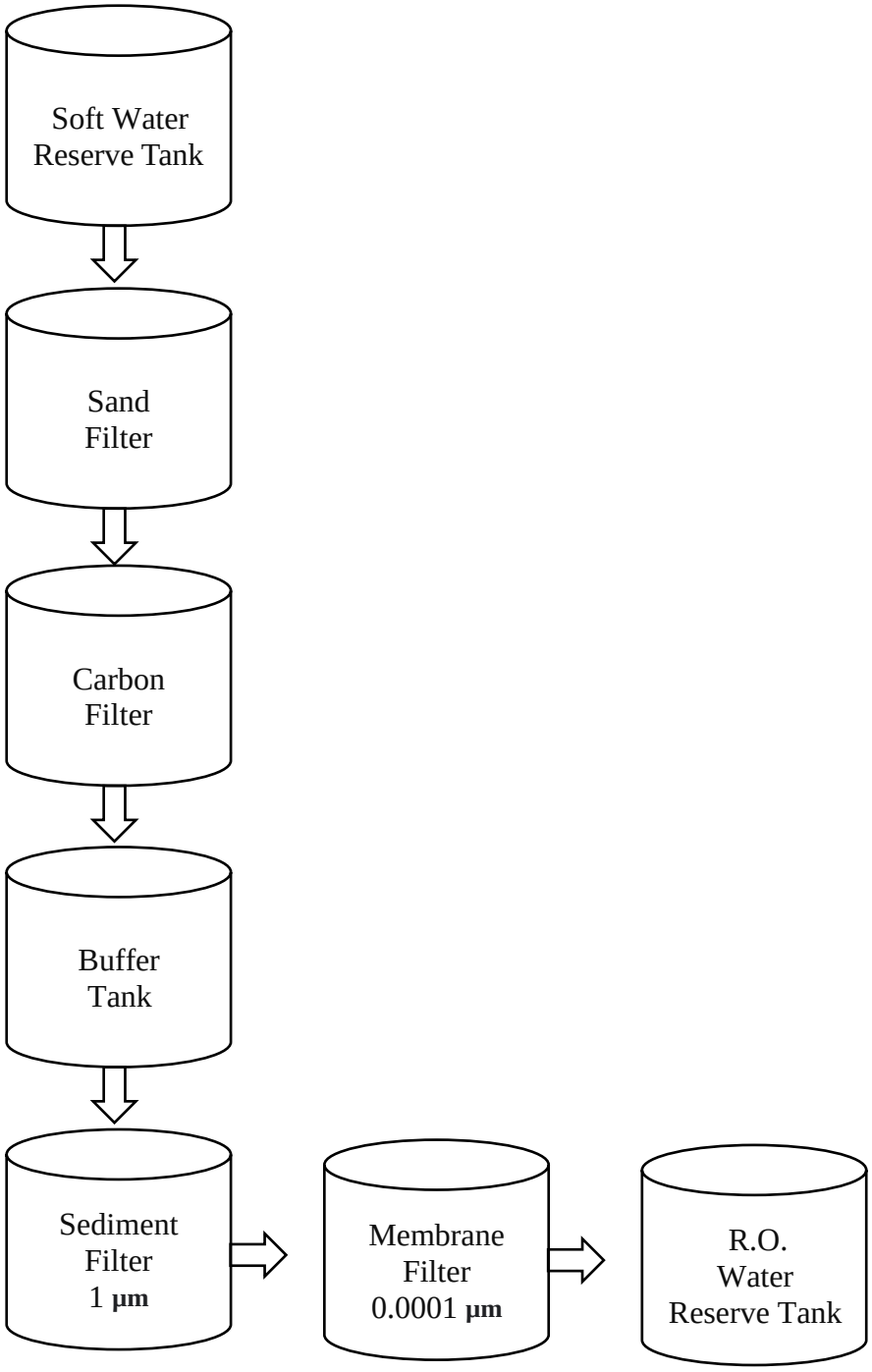
6.1 Flow Diagram of WTP


Borewell
Chlorine Solution Dosing 0.2- 0.5ppm
Underground Water (Capacity:11 kh)
OPRP
Lime: 2.5%
FeSO4:5-8%
Bleaching: 0.7-1 %
Coagulation Tank
OC Check
Buffer Tank
Back & Right wash after 24 hours
Sand Filter
OC Check
Reserve Tank
Back & Right wash after 24 hours Steaming 3 hrs at 85 ° C & Contact time 4 hrs test every 7 days.
Activated Carbon Filter
OC Check


Micron Filter
5.0 µm
1 µm
0.2 µm
Polisher filter are soaked in 5% Citric acid and hot water solution (65-70° C) for 4h. In 7 days interval then wash
Dosing 2.0% H2SO4 For PH Adjustment
Mixing Tank
Treated Water Reserve Tank
QC Check
QC Check
Drinking Water

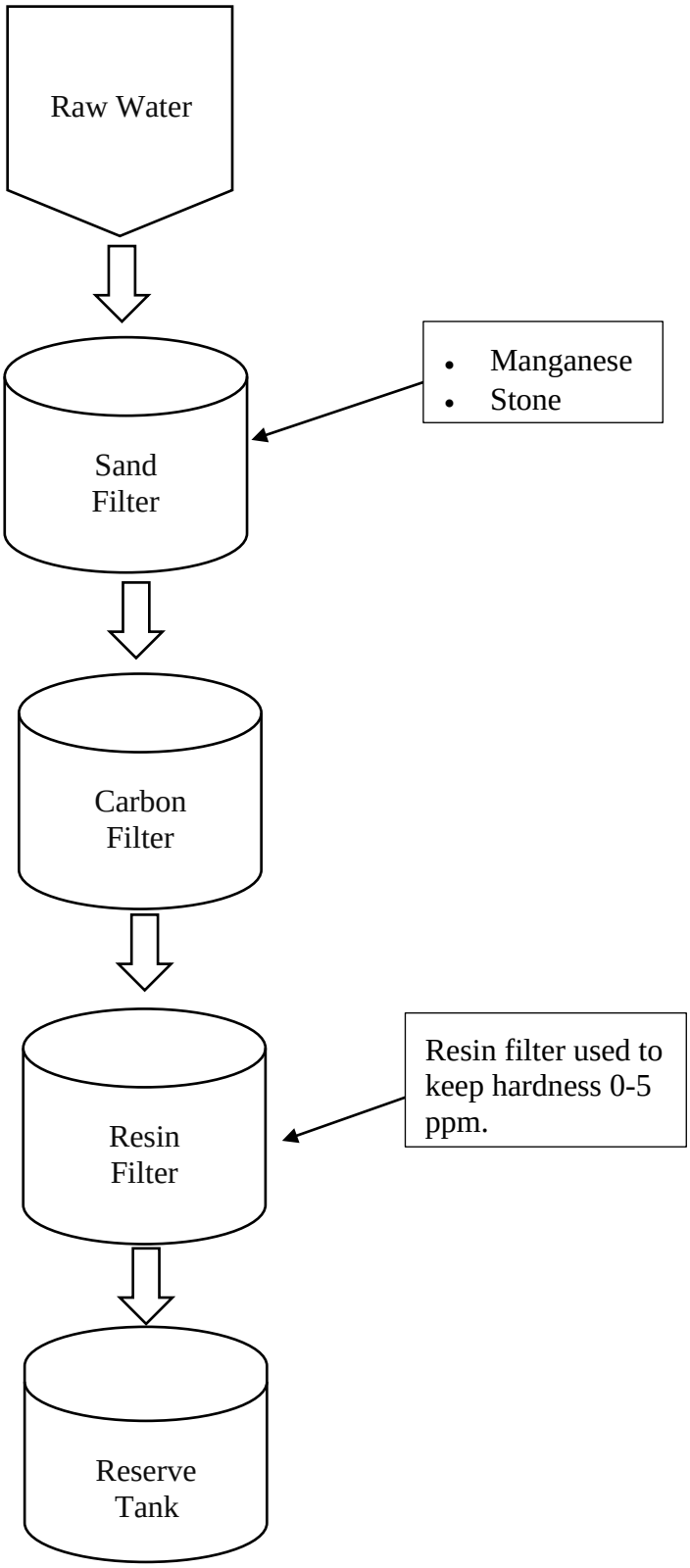
6.3 Reverse Osmosis Water

6.4 Flow Diagram of Reverse Osmosis Water



6.5 Soft Water

6.7 Flow Diagram of Soft Water



6.6 Different type of Water and their quality parameters

Water Name	P^{H}	TDS	Hardness	Alkalinity	Chloride	Iron
Raw Water	6.8-7.8	300-400ppm	250-350ppm	250-350ppm	50-70ppm	1.0ppm
Treated Water	8.5-10	<500ppm	<300ppm	50 ppm	250 ppm	0.3 ppm
Drinking Water	6.0-8.5	<500ppm	<300ppm	50 ppm	250 ppm	0.3 ppm
R.O. Water	<6.2	15 ppm	0	-	7 ppm	0.02ppm
Soft Water	<6.2	300-400 ppm	0.5 ppm	-	50-70 ppm	0.02 ppm

6.7 Required Test for WTP Plan

- PH Test : Doing by PH meter.
- TDS Test : Doing by TDS meter.
- Iron Test : Doing by Spectrophotometer.
- Hardness test.
- Alkalinity test.
- Chloride test

6.8 Determination of Hardness

AIM: To calculate, using the EDTA method, the total hardness (Ca & Mg) present (as CaCO3) in the provided water sample.

Chemicals:

1. Buffer solution
2. Inhibitor
3. Eriochrome black T indicator
4. Standard EDTA Solution (0.01M)

Procedure:

- In a conical flask, place 100 ml of the thoroughly mixed sample.
- Next, add 5 ml of the buffer solution.
- (Titrate with standard EDTA (0.01M) while adding 2–3 drops of eriochrome black T until the wine red .
- color turns blue, then record the amount of EDTA needed.

Calculation:

Hardness = Burette reading × 10

= 11.5 × 10

= 115 ppm

6.9 Determination of Alkalinity

Aim: Determine the Alkalinity of given water samples.

Apparatus: Burette, conical flask, pipette, measuring cylinder.

Reagents: H_2SO^4 solution, indicator, $Na_2S_2O_3$.

Procedure:

- Pour 100 ml of a thoroughly mixed sample into a conical flask.
- Add two or three drops of Na2S2O3 (0.1040 N).
- Titrate by adding a few of drops of indicator until the light green color turns pink, then make a note.
- reducing the reading.

Calculation:

Alkalinity = Burette reading × 10

= 3 × 10

= 30 ppm

6.10 Determination of Chloride in Water

Aim: Determine the chloride of given water samples.

Apparatus: Burette, conical flask, pipette**.**

Reagents: Potassium chromate indicator solution, standard silver nitrate as a titration agent.

Procedure:

- Fill a conical flask with 100 ml of the sample.
- Include 1.0 ml of the potassium chromate indicator solution.
- The combination starts out with a light golden hue.
- Titrate a brick-red end point with a standard silver nitrate solution, and record the volume .

- Use of titrant.

Calculation:

Chloride = B.R. $*$ Normality ($AgNO_3$) $*$ 35.45 $*10$

$= 1.8 * 0.1021 * 35.45 * 10$

= 65.15 ppm

CHAPTER 7

CONCLUSION

7. Conclusion

AKIJ Group has a legacy that dates back more than 50 years, and through the years, it has established itself as the proud and well regarded industrial family of Bangladesh. AKIJ Group is one of the largest conglomerates in Bangladesh. It contains 24 major issues. AKIJ Group began as a modest jute business and has now expanded to include a variety of operations and products. more than 50 years ago, a trader. We are grateful for the chance to receive training in the production industry. We've arrived Under the supervision of the separate production incharge, Q.C. In-charge, and operators, practical knowledge and industrial experiences. We will use this experience to shape our future jobs.

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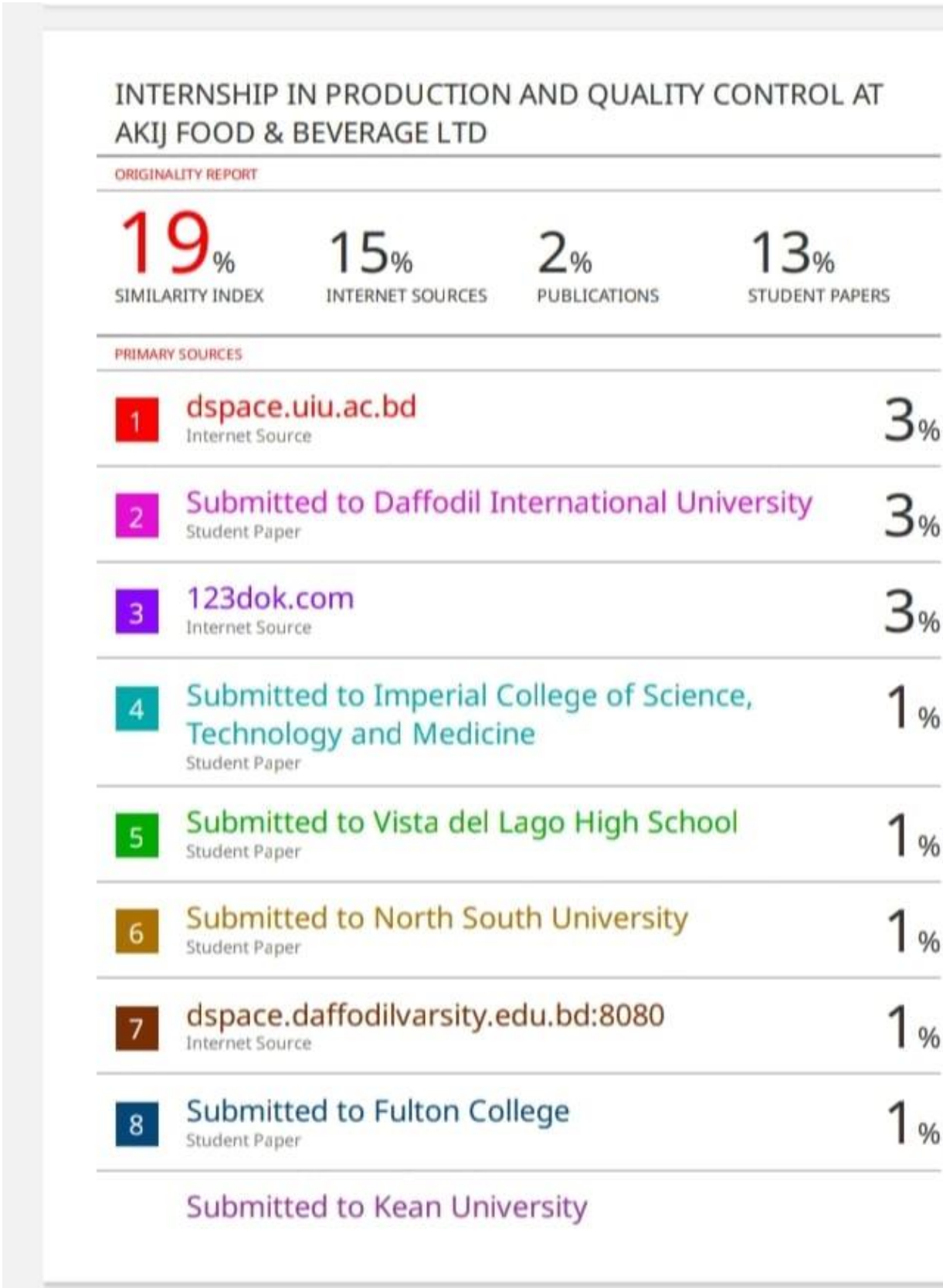

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