PLANT ASSESSMENT

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MTO- Engineering (Trainee)
HIP- Bongo Bakers Ltd.(Sweet Rusk)

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Introduction

The Sweet Rusk Line, operating under the Bongo Bakers Ltd. (BBL) of PRAN Group, is a multi-product production line responsible for manufacturing **PRAN Sweet Rusk, PRAN Mega Bun** and **PRAN Plane Bun**. This line integrates standardized bakery operations including dough mixing, moulding, proofing, baking, cooling, slicing, secondary baking (for rusk), and controlled packaging, ensuring high process efficiency and product consistency.

While PRAN Mega Bun and PRAN Plain Bun are produced as single-baked yeast-leavened bakery products, PRAN Sweet Rusk undergoes additional slicing, double baking, moisture reduction, seasoning, and foil-lined packaging to achieve its characteristic crispness and extended shelf life. The Sweet Rusk Line operates in compliance with GMP and HACCP principles, with critical control maintained at thermal processing and metal detection stages.

Sweet Rusk Line: Double-baked, low-moisture, crisp product with extended shelf life.
Mega Bun & Plane Bun: Single-baked, sliced, cream-applied, soft bakery products.

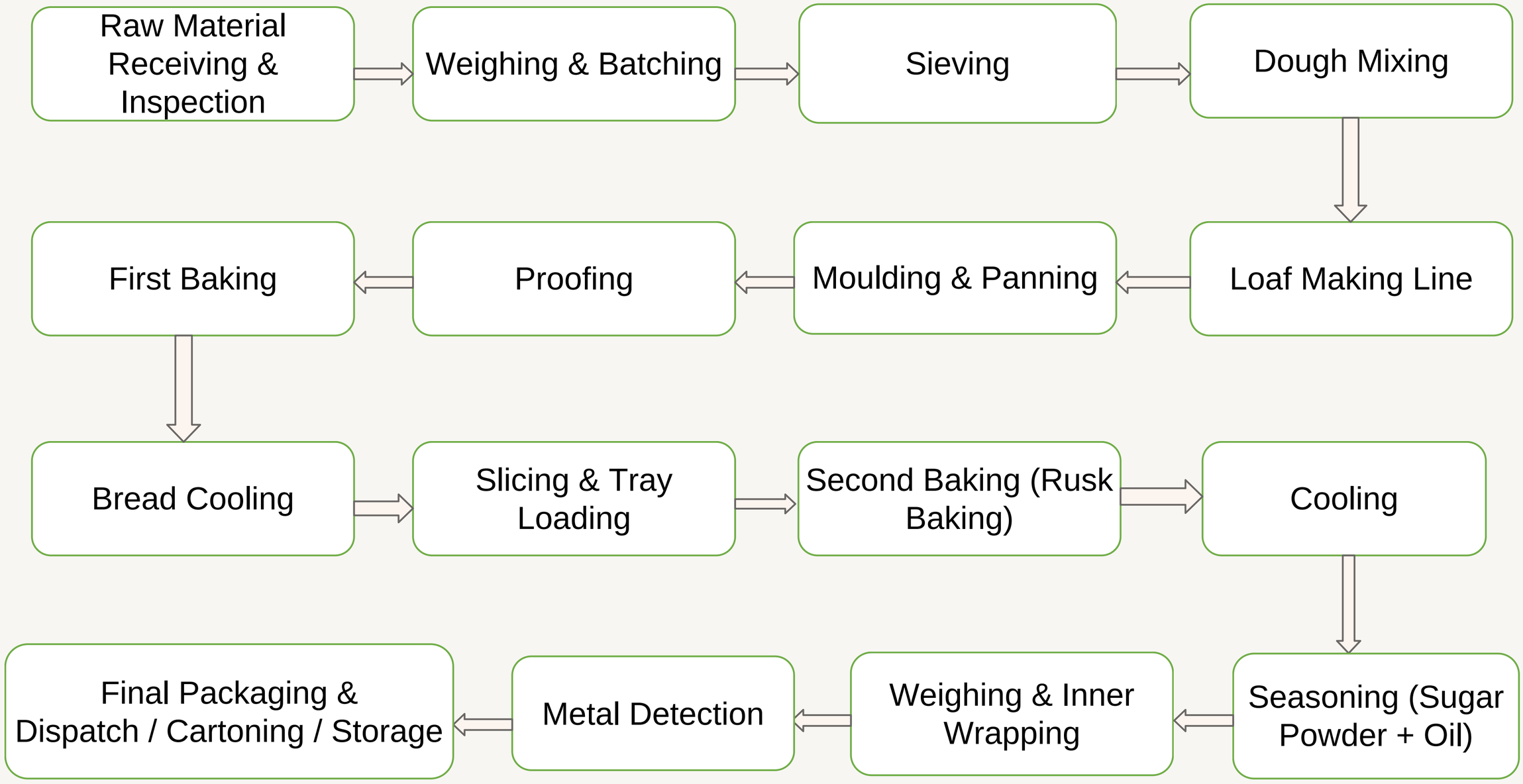
Products Manufactured Under the Sweet Rusk Line (BBL)

1. Pran Sweet Rusk

2. Alltime Mega Bun

3. Alltime Butter Bun

Process Flow Diagram For SWEET RUSK Line



Process Flow Diagram For SWEET RUSK Line

Raw Material Receiving & Inspection	Ingredients like flour, sugar, oil, and yeast are checked for quality and contaminants. Substandard materials are rejected. Weighing scales and inspection tables are used.
Weighing & Batching	Ingredients are measured accurately according to the formula using electronic scales and batching hoppers to ensure consistent dough quality.
Sieving	Flour and dry ingredients are sieved to remove lumps and foreign particles, ensuring uniform dough formation. Rotary or vibrating sifters are used.
Dough Mixing	All ingredients are mixed into uniform dough with proper consistency and temperature using spiral or planetary mixers.

Process Flow Diagram For SWEET RUSK Line

Loaf Making Line → Dough is divided, rounded, and rested to develop consistent loaf structure. Dividers, rounders, and resting trays are used.

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Moulding & Panning → Rounded dough pieces are shaped into loaves and placed in pans for proofing using automatic moulders and panning machines.

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Proofing (Fermentation) → Dough loaves rise under controlled temperature and humidity in a proofing chamber, developing volume, texture, and flavor.

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First Baking → Loaves are baked in rotary ovens to form structure and partially reduce moisture. Baking time and temperature are controlled.

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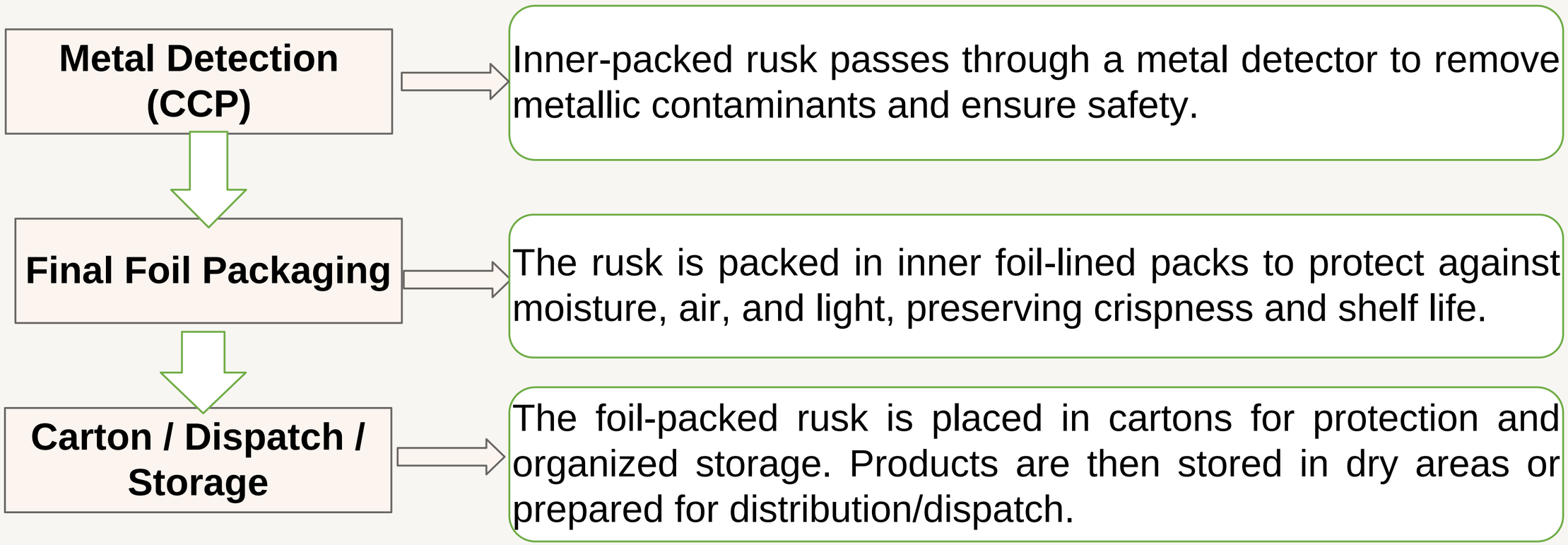
Bread Cooling → Baked loaves are cooled on conveyors or racks to prevent breakage during slicing.

Process Flow Diagram For SWEET RUSK Line

Slicing & Tray Loading	Cooled loaves are sliced uniformly and arranged on trays for second baking, ensuring even heat. Tray loaders or conveyors handle placement.
Second Baking	Slices are baked in rotary oven to reduce moisture and develop crispness.
Cooling After Second Baking	Rusk is cooled to prevent condensation and preserve crisp texture using cooling conveyors or racks.
Seasoning / Coating	Cooled rusk is coated with sugar powder and edible oil using a seasoning drum for taste and appearance.
Weighing & Inner Wrapping	Seasoned rusk is weighed and packed into inner packs using scales and wrapping machines to protect it from moisture.

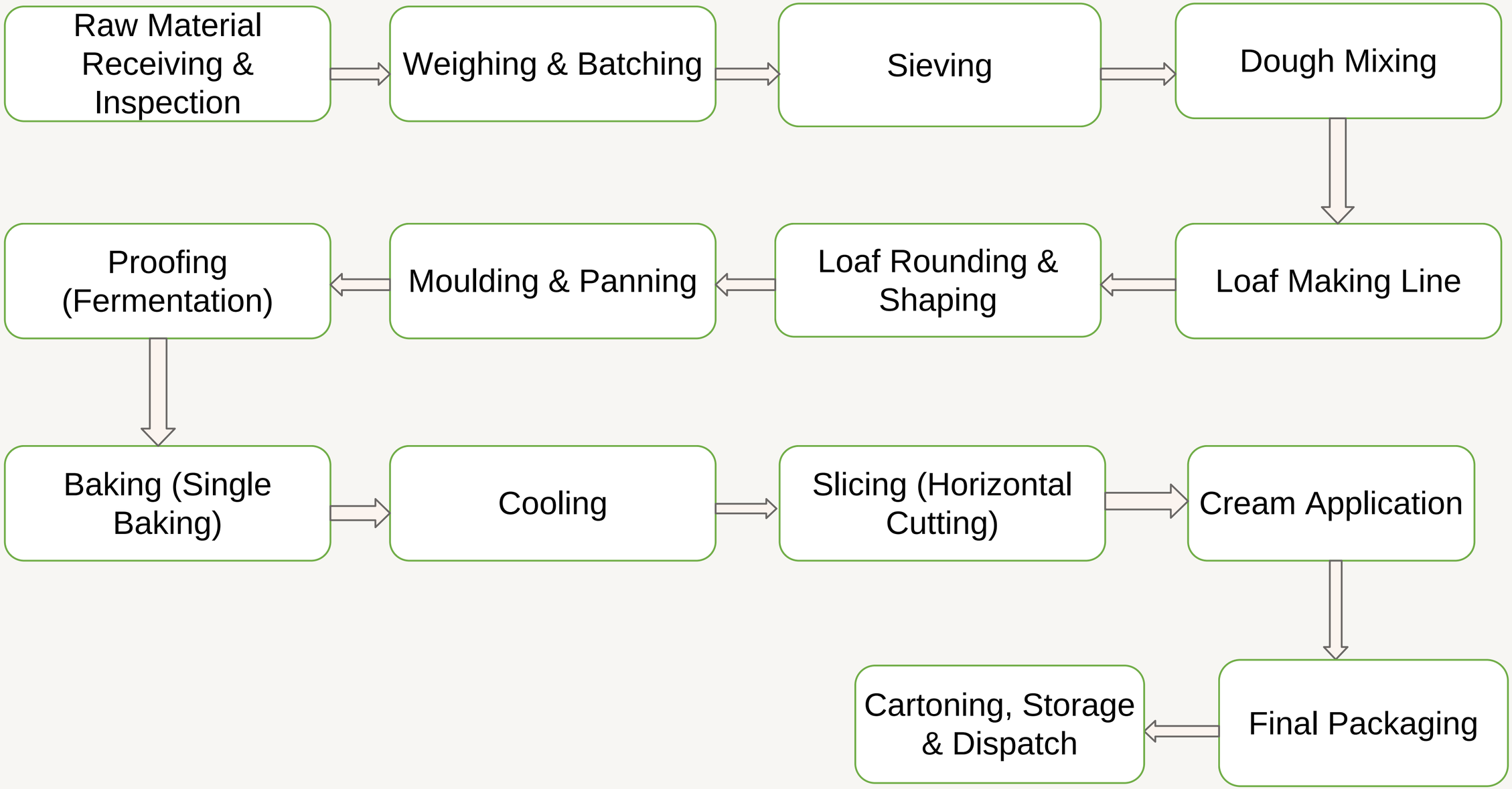
Process Flow Diagram For SWEET RUSK Line



Standard Manpower Placement Sweet Rusk

Section	Day Shift (Avg. Of 30 days)	Night Shift (Avg. Of.30.days)
Raw Material → Weighing → Sieving	74	67
Mixing → Dividing → Moulding		
Proofing → 1st Bake → Cooling		
Slicing → Tray Loading → 2nd Bake → Cooling		
Seasoning → Wrapping		
Metal Check →Foil Packaging		
Dispatch / Cartoning / Storage		
Production rate(Avg. Of 30 Days)	≈4984 kg	≈4535 kg

Process Flow Diagram For mega BUN LINE & PlanE BUn



Standard Manpower Placement Mega Bun & Plane B

Section	Day Shift (Avg. Of 30 days)	Night Shift (Avg. Of.30.days)
Raw Material → Weighing → Sieving	60	58
Mixing → Dividing		
Moulding → Panning		
Proofing → Baking → Cooling		
Slicing → Creaming		
Metal Check → Packaging		
Dispatch / Cartoning / Storage		
Production rate(Avg. Of 30 Days)	Mega≈2560 kg & Plane≈1100kg	Mega≈2730 kg & Plane ≈940kg

Critical Control Point for Sweet Rusk

1. **Metal Detector:** Ensuring that no metal contaminants enter or get stuck in critical portions of the noodle production process is absolutely essential for consumer safety. Any foreign particles, especially metals, can pose serious health risks, making this one of the most crucial aspects of manufacturing. Therefore, stringent quality control measures, thorough inspections, and advanced detection systems must be in place to prevent contamination and safeguard consumer well-being.
2. **Baking Temperature:** For PRAN Sweet Rusk, both the first and second baking stages are critical control points (CCPs). The first baking at 240–250°C ensures loaf structure, partial moisture reduction, and microbial safety. The second baking at 150–160°C reduces moisture to below 6–8%, creating crisp texture and extended shelf life. Oven temperature, baking time, and moisture are strictly monitored, and any deviation requires corrective action such as re-baking or batch rejection. These two stages are essential to maintain both food safety and product quality.

Critical Control Point for Mega Bun & Plain Bun

1. **Metal Detector:** Ensuring that no metal contaminants enter or get stuck in critical portions of the noodle production process is absolutely essential for consumer safety. Any foreign particles, especially metals, can pose serious health risks, making this one of the most crucial aspects of manufacturing. Therefore, stringent quality control measures, thorough inspections, and advanced detection systems must be in place to prevent contamination and safeguard consumer well-being.
2. **Baking Temperature:** The baking stage is a critical control point where oven temperature and baking time are closely monitored to ensure microbial safety and proper product quality. For Mega Bun and Plain Bun, baking is typically conducted at 250–260°C, which ensures elimination of pathogens, proper loaf structure, and uniform texture. Any deviation from these limits requires corrective actions such as re-baking or batch rejection to maintain food safety and consistent product quality.

Recommendations For Productivity Improvement

Process of Productivity Improvement: A systematic approach to increase efficiency, reduce waste, and enhance output by improving operations and workflows.

Recommendations – Mega Bun, Plain Bun & Sweet Rusk

1. Automated Slicing: Ensure uniform thickness and reduce contamination.

2. Semi-Automatic Packaging: Maintain hygiene, correct weight, and speed up packing.

3. Foil Wrapping (Rusk): Protects moisture, extends shelf life, reduces manual contact.

4. Semi-Automatic Cartoning: Reduces handling errors and product damage.

5. Hygiene & PPE: Gloves, hairnets, masks, aprons for all operators.

6. Workstation & Training: Ergonomic setup and regular GMP/HACCP training.

7. Quality Checks: Monitor weight,uniform placing, slice thickness, and metal detection.

Thank You Everyone