



**Preparation of Rusk:** The whole rusk preparation can be understood in the following steps.

## STEP 1:

### Sponge Preparation:

- Compressed yeast (*Saccharomyces cerevisiae*) 2.7 Kgs maintained at 20°C add 100 g Bread Four & 100 g sugar with 4-liter water in a vessel. Stir, retain as it is till the bubble appears (it means activation done). The water temperature for yeast activation is 28 - 30°C. The standing time for the yeast solution is around 10-12 minutes.
- Consider a bowl of the mixer. Add whole quantity of Bread Flour to the bowl, followed by crystal Sugar (crystal sugar used must be passed through a strong magnet of 15000 gauss and then through the sieve of 10 mesh).
- Add Wheat gluten, Bread improver, Suji (without soaked). Mix it properly for 1-2 mins, followed by activated yeast, soaked wheat fiber Start the mixing.
- The remaining water should be added slowly during the mixing. Water temp should be adjusted so that
  - Sponge Temp. should be maintained between 30-32°C.
  - Spiral Mixer use (Mixing Time): First Mixing: 10 mins. (-slow Speed= 4 mins, - Fast Speed = 6 mins fast piper
  - Lay Time: The bowl is covered with wet cloth & kept for fermentation at ambient conditions for 35-40 minutes (at extreme summer should be kept in AC room at 20°C for maintaining sponge temperature). The final temperature after laytime is 30°C-32°C.

## STEP 2:

### Dough preparation:

1. STEP-A: Mix Refined, bleached, and deodorized (RBD) Palm Oil & Lecithin separately in a blender.
  2. STEP-B: Consider the same sponge bowl. Now add to this remaining crystal Sugar, blend of RBD Palm Oil & Lecithin, SMP. Cardamom Flavour (in winter, flavor container should be kept on water bath having temp of 45 to 50°C) and Cardamom Seeds (crushed into 2-3 parts by a suitable grinder). If a small quantity of RBD Palm
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Oil is added at the end of mixing for the easy release of dough, the oil should be withdrawn from the initial quantity of RBD Palm Oil. No extra oil to be used at this step.

3. Meshing Time: 10 mins. (-Slow Speed= 4 mins. -Fast Speed = 6 mins.)
4. The final dough temperature after mixing should be not more than 34°C.

### **STEP 3:**

#### **Dividing & Moulding:**

1. The pans are greased with a greasing agent (Palmolein Oil)
2. The dimensions of the pan are generally 305-326 mm X 49 mm X 85 mm
3. Length of Rusk pan may vary according to trolley and oven size.
4. The dough is taken for dividing & molding. The time required will be around 10-12 minutes
5. Dough weight per pan is 275-285 gm for 305 mm pan length
6. 305-315 gm for 326 mm pan length (This is for each rusk slice weighing 9.1 g and dimension 75 mm x 45 mm x 14 mm)
7. The dent should be skillfully pressed for every pan.

### **STEP 5:**

#### **Proofing**

1. Swing: Here the lid is to be kept on the pan to avoid contamination during Proofing
2. Trolley: Here, it can be kept without a lid, keeping in mind the better quality and less proofing time
3. Proofing room conditions are RH =80-90%, Temperature = 35-40'c.
4. Proofing time = 45 minutes to 1 hour

### **STEP 6:**

#### **First baking:**

##### **rack oven**

1. The lids should be kept over pans.
2. Baking Time: 30 minutes, Baking Temp.: 190 to 195 C
3. After baking, the final moisture content of bread should be 29 to 30%.

##### **Tunnel oven**

1. The lids should be kept over pans.
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2. Baking Time & Oven profile to be set so that the bread should contain 30-35 % moisture with proper bread color.

#### **STEP 7:**

##### **Depending & Cooling:**

1. The loaves are depanned while hot & loaded on the SS trolleys
2. Give 1-hour cooling at normal condition, & then 4-5 hrs forced cooling.
3. After cooling, the final bread moisture should be 20-21%.

#### **STEP 8:**

##### **Slicing:**

1. The loaves are sliced through an automatic slicer. The distance between two successive blades should be
2. approx. 14.5 mm
3. Slice thickness should be 14 mm approx.
4. Slicer blade quality should be sharp of thickness min. 0,4 mm

#### **STEP 9:**

##### **Second baking:**

##### **Rack Oven**

1. The slices are spread over the trays & baked in the Rotary Oven at 160-170°C for 30-32 minutes
2. There should not be any gap between the slices.

##### **Tunnel Oven**

1. Baking Time & Oven profile to be set so that the final product moisture is 1.8% and no dark edges.

##### **Metal detector:**

1. All bread and rusk slices should be passed through a metal detector.

#### **STEP 10:**

##### **Cooling & packing:**

1. The main goal is to decrease the internal temperature of the baked rusk from 180–190°C, depending on or coming out of the oven, to 32–43°C (90–110°F). Cooling can
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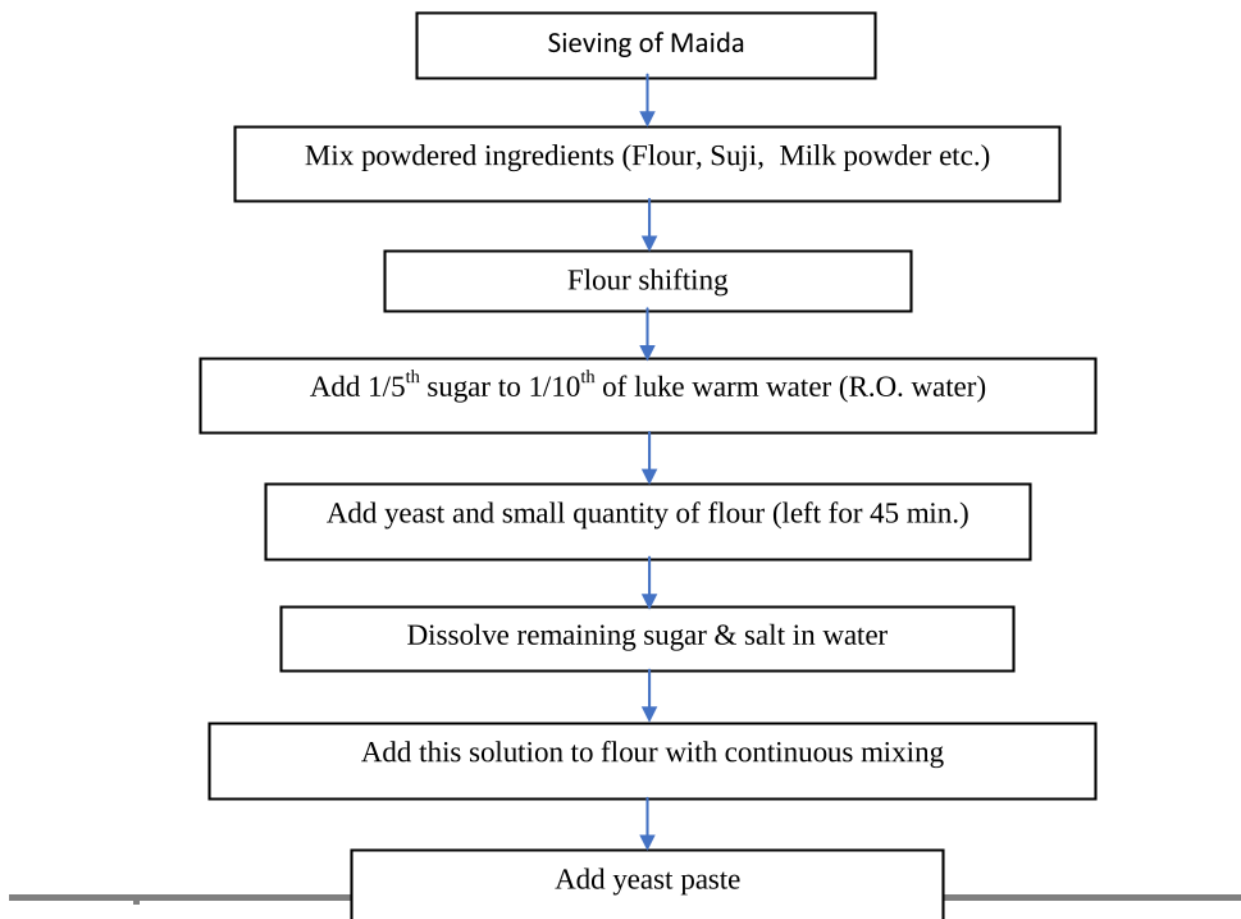
be done by Natural cooling or Forced-cooling. Baked rusk slices are cooled to a moisture content of (1-1.2%).

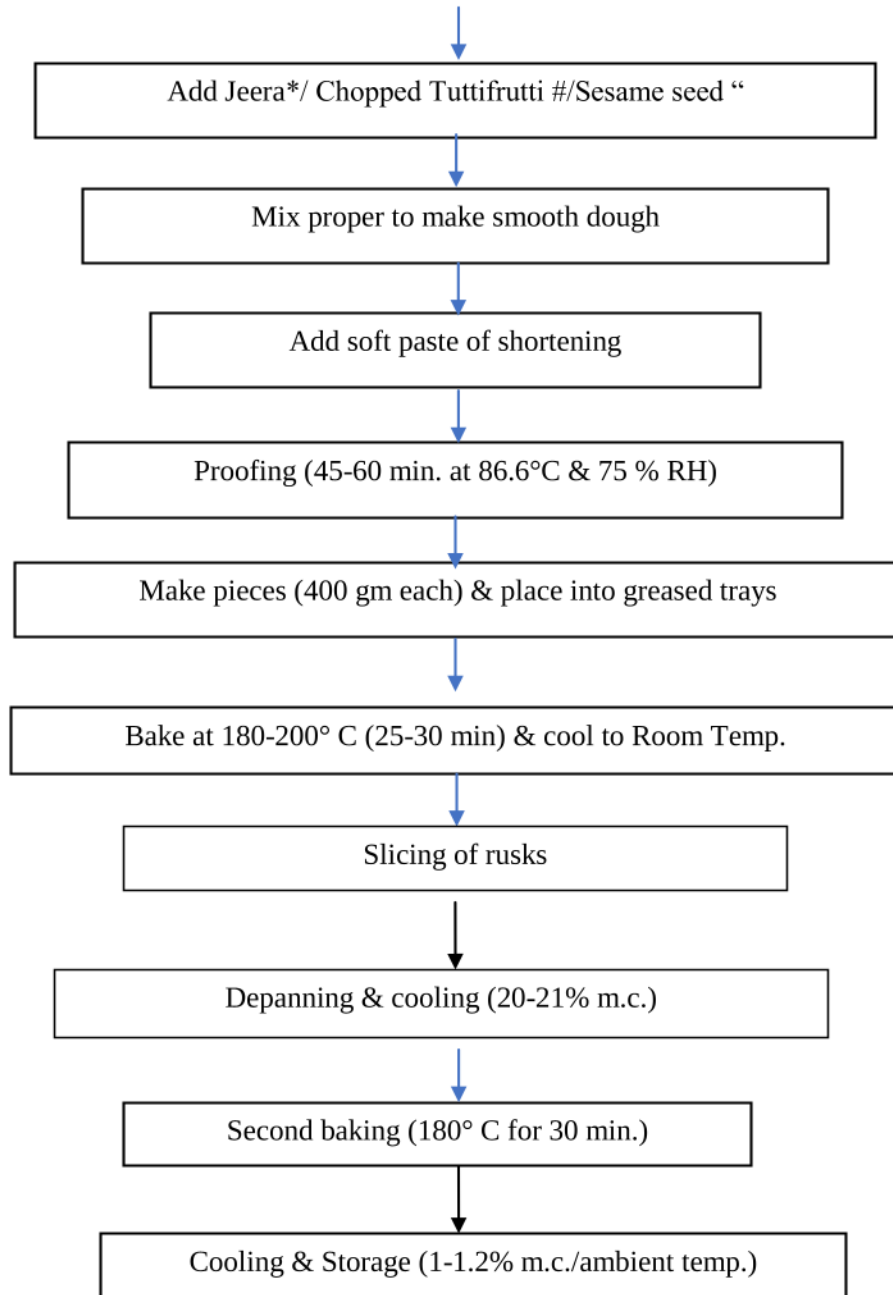
2. Packing can be done in Polypacks, Paper bags, bags in boxes for superior strength, or water resistance paper bags.

#### **Types of packs for rusk:**

- **Loose wrap:** Loosely wrapped unsealed packs are generally obtained by using one side of waxed paper.
  - **Primary pack:** (Individual pack made by using both sides waxed, printed paper having play value and to be dispensed as a unit.
  - **Secondary pack:** A pack in which a product is pre-packed in a carton and subsequently over wrapped with protective waxed wrappers
3. Packet weight to be checked at the end of Packing, 100% CB weight to be checked & written on the CB

#### **Process flow chart of Rusk Preparation**










**Table 1: Sample Recepte of a Rusk preparation Unit:**

S.no	Raw Materials	Sponge (Kgs)	Dough (Kgs)
1	Bread Flour	72	0
2	Crystal Sugar	9.6	16.8
3	Palm Oil	0	9.6
4	Suji	2.4	0
5	Yeast	2.7	0
6	Skimmed Milk Powder	0	1.2

7	Iodised Salt	0	0.84
8	Wheat gluten	0.6	0
9	Lecithin	0	0.24
10	Flavors	0	312 ml
11	Bread Improver	0.24	0
12	Water	33-35 ltr	0

**: Plant & Machinery required for rusk industry**

<b>Machine</b>	<b>Machine Description</b>	<b>Image</b>
Spiral Mixer	Spiral mixers are best suited for mixing dough because they keep the dough at a lower temperature given how the mixer bowl rotates as the spiral hook spins to knead the dough	
Rotary Rack Oven	They are ideal for baking a wide range of baked goods including bread, rusk, cookies, cake, and so much more	
Normal slicer	Used for slicing rusk into small size.	

<p>Swing tray oven</p>	<p>Used for first baking.</p>	
<p>Tunnel oven</p>	<p>Used for baking in a continuous process.</p>	
<p>Molds, storage tank, collection tank etc.</p>	<p>Used for storage of raw material &amp; finished goods.</p>	