



(Sake) - EC1118

Part 1: Rice Koji Production ()

Specifications & Ratios

- **Raw White Rice (Short-grain/Sushi Rice):** 2 Go (approx. **300g**)
- **Koji-kin Starter (*Aspergillus oryzae*):** **0.6g** (0.2% of raw rice weight)
- **Plain Flour:** **6g** (Used as a dispersing agent to mix with the starter spore powder)
- **Target Incubation Temp:** **30°C - 35°C**
- **Absolute Maximum Temp:** **42°C** (Spores die above this limit)
- **Total Fermentation Duration:** **48 Hours**

Step-by-Step Instructions

1. Washing & Soaking (Washing to Translucency)

- Wash the 300g of raw rice repeatedly until the water runs completely crystal clear. This removes surface starches that cause stickiness.
- Soak the rice in room-temperature water. Soak for **6-8 hours** during summer, or up to **12 hours** during winter.

2. Draining & Steaming (The "Firm Outside, Soft Inside" Rule)

- Pour the soaked rice into a mesh colander and drain for **at least 1 to 2 hours**. The surface of the rice grains must feel completely dry to the touch before steaming.
- Line a steamer with a clean, damp cotton cloth. Pour the drained rice inside and poke a few vent holes through the rice layer using your finger to let steam pass.
- Steam over high heat for **30-40 minutes** once the water reaches a rolling boil.
- **Quality Check:** Taste a few grains. They must be firm on the outside but soft inside, without any hard, dry uncooked white core. It must not be sticky or mushy like regular table rice.

3. Cooling & Inoculation (Seeding the Spores)

- Spread the steamed rice across a clean, dry flat tray. Use a rice paddle to fluff and break up any clumps. Let it cool down naturally to **36°C - 38°C** (lukewarm to the touch).
- In a small dry bowl, thoroughly blend the 0.6g of Koji starter powder with the 6g of Plain Flour.

- Fit a fine-mesh tea strainer over the tray and dust the powder mixture over the rice in 2 or 3 separate batches. Mix thoroughly between each dusting to guarantee every grain is evenly coated.

4. Primary Incubation (Hours 0–24)

- Bundle the inoculated rice tightly into a clean, completely dry cotton cloth.
- Place the bundle inside an environment capable of holding a stable temperature of **30°C–32°C** with **80%–90% humidity** (e.g., an oven with only the light turned on, or a rice cooker set to a monitored Yogurt Mode). Place a mug of hot water next to the bundle to provide moisture, and prop the door/lid open slightly to vent condensation.
- Around hour 18 to 24, you will notice the rice grains losing their shine and developing a matte appearance. Faint white, thread-like mycelium will begin to sprout.

5. Turning & Temperature Regulation (Hours 24–48)

- **First Turning (approx. Hour 24):** The koji will begin generating its own biological heat. Unwrap the bundle, break up any matted rice clumps, mix thoroughly to distribute heat and oxygen, and bundle it back up a bit more loosely this time.
 - **Second Turning (approx. Hour 32–36):** The mycelial growth will accelerate rapidly, causing the internal temperature of the rice clump to spike. Check the temperature using a probe thermometer every 2–3 hours. **If the core temperature hits 39°C–40°C, unpack the rice immediately, spread it thin on the tray to dissipate heat, and shut off your artificial heat source.** Never let the core temperature breach **42°C**.
 - **Harvest (Hour 48):** The white mycelium should bind the rice together into a firm, solid white cake that detaches neatly from the tray. It should emit a sweet, fragrant aroma reminiscent of fresh mushrooms or sweet rice wine. Break the cake apart gently into loose grains to cool it down and halt growth.
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Part 2: Sake Brewing (酒造り)

Specifications & Ratios (Single-Stage "All-In" Formula)

- **Homemade Rice Koji:** Half of your batch (approx. **150g**)
- **Steamed Rice (Main Adjunct):** 1 Go raw weight (approx. **150g**), washed, soaked, steamed, and cooled to 20°C.
- **Water (Filtered/Bottled Mineral Water):** **450ml** (3 times the weight of the raw ingredient)
- **Lalvin EC-1118 Active Dry Yeast:** **0.5g** (Approx. 1/10th of a teaspoon)
- **Fresh Lemon Juice:** **1 Teaspoon** (Crucial for lowering pH to block spoilage)
- **Fermentation Temp:** **12°C - 16°C** (Cool ambient room, unheated hallway)
- **Duration:** **14 - 21 Days**

Step-by-Step Instructions

1. Vessel Preparation & Yeast Hydration

- Sanitize a 1.5L to 2L glass jar or food-grade fermentation vessel, along with all mixing spoons, using boiling water. Ensure everything is free of grease and soap residues.
- Rehydrate 0.5g of EC-1118 yeast in 30ml of lukewarm water (approx. 30°C) for 15 minutes until small bubbles form on the surface.

2. Mixing & Sealing

- Pour 450ml of bottled water and 1 teaspoon of fresh lemon juice into your sanitized jar.
- Add the 150g of prepared homemade rice koji and the 150g of steamed white rice (which must be cooled to **20°C-25°C**).
- Pour in the rehydrated yeast liquid and stir the mixture vigorously from bottom to top using a sanitized spoon.
- Seal the vessel tightly with a lid fitted with a fermentation airlock (or secure a layer of plastic wrap around the mouth using a rubber band and prick a few tiny pinholes for gas escape). The mixture should fill roughly 40%-50% of the jar's volume to allow space for expansion.

3. The Active Fermentation Window (Days 1-3)

- Store the vessel in a cool, dark place out of direct sunlight, ideally keeping the room temperature between **12°C and 16°C**.
- During the first 24 to 48 hours, the rice will absorb almost all the liquid, turning the mixture into a thick, porridge-like paste.
- **Daily Maintenance:** Open the lid once every 24 hours for the first 3 days only. Use a sanitized spoon to give the brew a thorough 1-minute stir to distribute the yeast and introduce oxygen. Reseal immediately. You will hear fizzy, effervescent popping sounds.

4. Low-Temperature Managed Fermentation (Days 4-21)

- **Leave the vessel completely sealed.** Do not stir or open the lid after Day 3.
- The active fermentation will peak between Days 4 and 10. Carbon dioxide will drive the rice grains upward into a thick floating cap, with a milky liquid layer bubbling beneath it.
- By Day 11-14, the bubbling will slow down. Because the starch is being converted to sugar and consumed by the yeast, the rice grains will lose structural weight and begin sinking to the bottom.

5. Pressing & Harvesting (The Final Polish)

- Between Day 14 and 21, the bubbling will stop entirely, and the airlock will fall silent. The top half of the liquid will turn semi-transparent and clear up, while a thick layer of white sediment rests at the bottom.

- Sterilize a fine mesh straining bag or cheesecloth with boiling water. Pour the contents of the jar into the bag and press firmly with clean hands to squeeze out every drop of liquid.
- The resulting creamy, opaque liquid is traditional cloudy sake (*Nigorizake*). For clear sake, store this liquid in a sealed bottle inside a 4°C refrigerator for 3 days; the fine starch sediment will settle to the floor of the bottle, allowing you to siphon off the clear, straw-colored sake from the top. Store under refrigeration and enjoy within a month.







-  /  2  300g 
-  0.6g  0.2% 
-  6g 
-  30°C - 35°C
-  42°C 
-  48 



1. 

- 300g


-  6  8   12  

2. 

-   1  2 


- 

-  30  40  
- 




3. 

- 36°C - 38°C
- 0.6g 6g
- 2 3

4. 0 24

-
- 30°C 32°C 80% 90%
- 18 24

5. 24 48

- 24
- 32 36 2 3
 39°C 40°C

 42°C
- 48

(Sake)

- 150g
- 1 150g 20°C
- 450ml 3
- Lalvin EC-1118 0.5g 1/10
- 1 pH
- 12°C - 16°C

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5.

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- 14 21
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Nigorizake
4°C 3
1

(Koji)

- 300g
- 0.6g 0.2%
- Plain Flour 6g
- 30°C - 35°C
- 42°C
- 48

1.

- 300g
- 6-8 12

2.

- 1 2
-
- 30-40
-

3.

-  **36°C - 38°C**

-  0.6g  6g Plain Flour 
-  2-3


4. 0 - 24

-   
-  Yogurt Mode
 **30°C-32°C**  **80%-90%**
 / 
-  18-24


5. 24 - 48

-  **24** 

  
-  **32-36**   2-3
  **39°C-40°C**
  **42°C** 
-  **48**   /





(Sake)



-   **150g** 
-  1  **150g**  20°C 
-  **450ml**  3 
- **Lalvin EC-1118**  **0.5g**  1/10 
-  **1**  
-  **12°C - 16°C** 
-  **14 - 21** 



1.

- 1.5L 2L
- 30ml 30°C 0.5g 15

2.

- 450ml 1
- 150g **20°C-25°C** **1**
-
- Air-lock 3-4
 4 5

3. 1 - 3

- **12°C-16°C**
- 24-48
- **3** 1

4. 4 - 21

- **4**
- 4 10
- 11-14

5.

- 14 21
-
- 4°C 3