

JICA CUP2 Project

HONEY ANAEROBIC PROCESS



7. Honey Anaerobic

Advantage of the process	- Create unique and complex flavor profiles, including bright acidity and fruity notes. - Produce consistent and high-quality outcomes.					
Recommended conditions	- Sugar contents >18.0 - Requires oxygen-free environment to activate different microbes such as tanks or GrainPro bags					
Steps	1 Harvesting	2 Sorting	3 Pulping	4 Anaerobic fermentation	5 Drying	6 Storage
	DAY 1			DAY 1-DAY 9 (if 192hrs)	DAY 10 (25-30 days)	-
						

Step 1: Harvesting

Purpose: Ripe cherries have good sugars and acidity to create flavors

Recommended equipment



Use a **container** of cherries during harvesting to easily collect cherries



Use a **plastic sheet under the tree** to collect any falling cherry.



Use **clean bags** to hold cherry during harvesting

Key concept

① Harvest **only well-ripen cherries**



Because well-ripen cherries are heavier



70kg

Weight
Farmgate price
Total income

700rwf

49,000rwf



100kg

700rwf

70,000rwf



② Start to harvest in **the morning**.



③ Deliver cherries to the station **within 8 hours** after harvest



④ Do **not** pick cherries **on the ground** to avoid **contamination**



⑤ Put coffee **under shade** after harvesting to avoid rapid fermentation

Step 2: Sorting – color sorting

Purpose: Classify cherries – Ripen / unripen / overripen

Checking point ①

At least 70% of cherries are **well ripen**

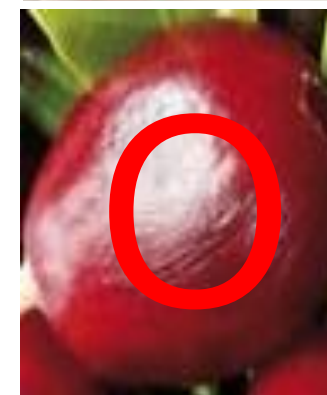


Checking point ②

Sugar contents: above 18.0



10.0



18.0

Step 3: Pulping

Purpose: remove the cherry skin while retaining mucilage

Equipment

Use a **pulping machine** (ideally using **LESS water** like vertical drum pulper)



Key concept

① **Use less water** to not to wash off the mucilage.



② **Adjust a blade, amount of cherry and flow speed** to avoid damage on parchments.



③ **Clean the machine everyday** to avoid contamination



Checking point

Take samples of 100 parchments and check if it's below 10% of damage beans, below 10% of unpulped cherries.

Inspect the parchment after pulping to ensure **minimal mucilage loss**. If not, calibrate the pulping machine.



7. Honey Anaerobic

Step 4: Anaerobic fermentation (Oxygen-free fermentation)

Purpose: Achieve anaerobic fermentation for flavor development

Equipment

An airtight tank to shut out oxygen to go inside

or

A GrainPro (plastic bag)

Key concept

- ① **Anaerobic condition:** The airtight tank or GrainPro bag is **kept sealed** to prevent airflow from entering.
- ② **Control temperature and humidity:** Store under a roof where temperature and humidity are stable.
- ③ **The length of fermentation** should be controlled. The recommended length is **up to 192hrs (8days) depending on the market demand** for honey anaerobic.

Checking points

- ① **Smell:** Avoid sour or vinegary aroma.

- ② **Color:** Check if beans changed their color.

- ③ **pH:** Should fall to **4.0 – 5.0*** by the end of fermentation.

**Though you can adjust depending on buyers' demand*



Step 5: Drying

Purpose: reduce moisture content and reserve mucilage for flavors

Equipment



A shade net and a plastic sheet to avoid strong heat, rain and dew.



A plastic/ wooden rake to stir without taking mucilage.



A moisture meter to check moisture.

*Moisture meter must be calibrated before use

Key concept

- ① On the first day, **strong sun is required** to stop fermentation. Without sun, please extend the time to open and dry.
- ② **Control temperature:** Use a **shade net** to cover from **11:00-15:00** to avoid strong heat. **Adjust according to the weather condition.*
- ③ **Control humidity:** Cover parchments with a **plastic sheet** to avoid rain and dew.
- ④ **Resting:** 1 day in a week, **cover parchment completely for resting.**
- ⑤ **Uniformity:**
 - **Stirring 4 times** a day by rake. Thickness of the layer: **Thin like 3cm (first week) → Thick.**



Checking point

- ① **Moisture contents:** Aim for **10.5-11.5%**. Use moisture meters twice a day.
- ② **Duration:** Typically, **25-30 days**. The drying process must be carefully controlled to avoid rapid or uneven drying.
- ③ **Parchment temperature:** The temperature should be always **kept below 35°C** to prevent damage.



Step 6: Storage

Purpose: stabilize beans post-drying for export or milling

Equipment

Use pallets to avoid damage
(e.g., water, bugs)



Key concept

- ① **Moisture control:** Maintain the bean moisture content at **10-12%**

**Adjust the MC if storage is either very hot or very humid*



- ② **Ventilation:** Control consistent **air flow** to avoid dew and high humidity



Checking point

- ① **Temperature:** Keep temperature at **15–23°C** to avoid damage



- ② **Humidity:** Keep humidity at **50–70%** to avoid mold



- ③ **Resting:** Beans should rest for **around 2 months** to stabilize MC

