INFORMATIONAL BULLETIN NO. 90-23-DES

DISTRICT ENVIRONMENTAL SERVICES DIVISION

Kombucha HACCP Plan Example

Product Description

The product is a fermented tea drink that can be flavored with various syrups, fruits and/or herbs.

Kombucha needs to be processed and packaged at an approved permitted kitchen. The process can take a week or more per batch.

Kombucha is naturally acidic. The process of making kombucha will involve its pH remaining at or below 4.6 from the beginning of the process to the end.

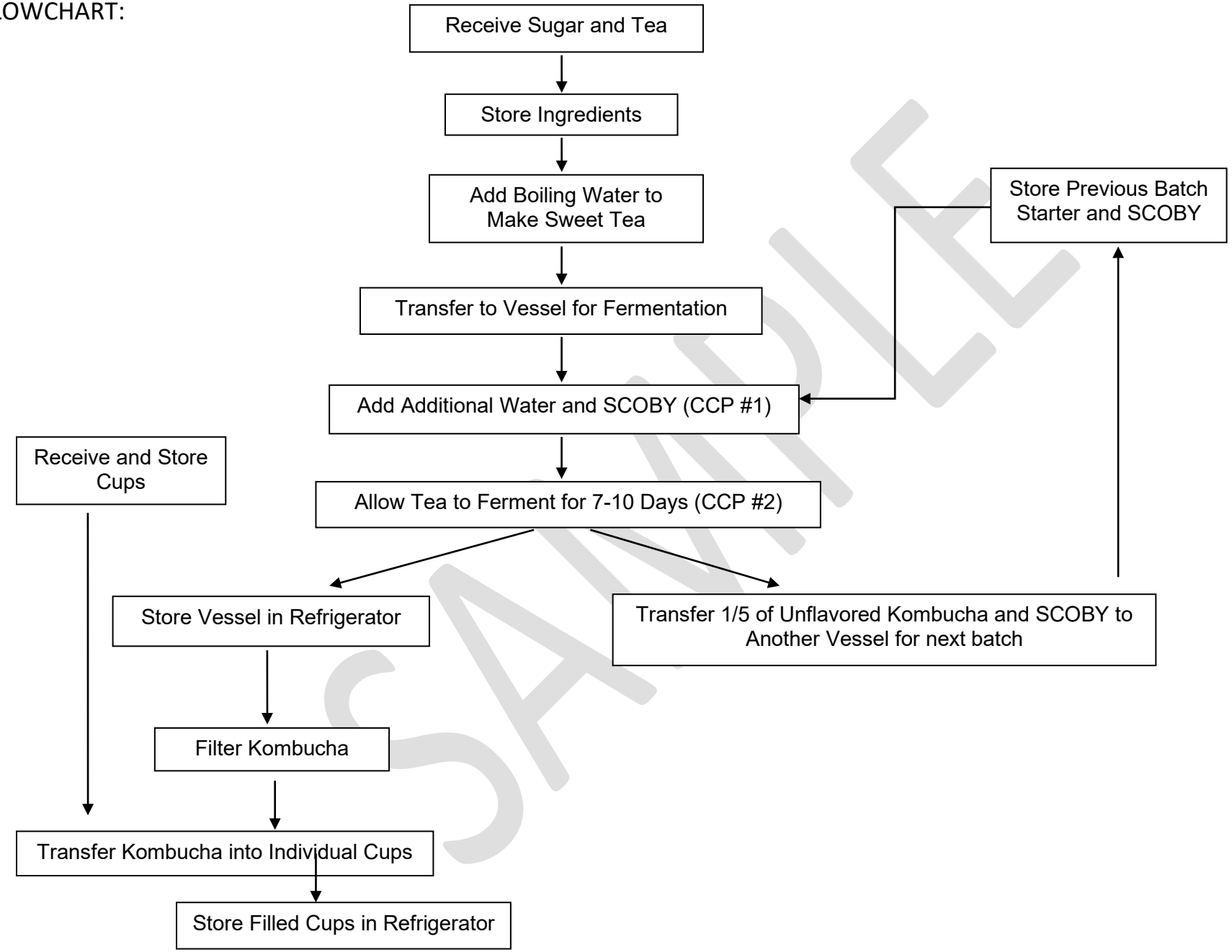
The final product needs to be tested for pH and alcohol content from a third-party accredited lab to ensure the alcohol content is below 0.5%

Retail distribution from the location it is made is covered with a permit from Environmental Health. Distributing from another location such as a farmers' market, community event or another third-party distributor may require additional permits from the local Environmental Health Department and the California Department of Public Health. Contact both programs for details and clarification on which permit(s) are needed based on your proposed operation.

The finished product should be sold chilled as the product continues to ferment. Cold slows down the fermentation process.

If bottled, the bottle should be properly labeled with the name of the product including ingredients, location at which it was made and how it is to be stored. If bottled, operator should also include bottling procedures and/or specific equipment bottles/caps utilized in the HACCP plan. Below is an example HACCP plan for Kombucha that is not bottled prior to sale.

FLOWCHART:



Menu/Ingredients
(Provide measurements for each ingredient to make a batch)

Ferment plain kombucha (note; flavoring could be added later and if so would need to be included and specified)
Plain Kombucha
1. Filtered Water
2. Green Tea
3. Granulated Sugar
4. Starter Kombucha (plain kombucha from last batch + SCOBY*)

* SCOBY to come from an approved source (permitted facility)

Equipment List (provide make and model numbers)
1. Fermentation Vessel - stores the sweetened tea as it ferments (typically glass or stainless steel)
2. Tea Brewing Pot - heats the water to brew tea and dissolve sugar
3. Cups – to store kombucha
4. Refrigerator
5. Utensils: spoon, ladle, glass cup, probe thermometer, metal strainer
6. Ph meter

Standard Operating Procedures (SOPs)

Warewashing/Sanitizing
To be washed/sanitized: Fermentation vessel, tea boiling pot, utensils, cups
After use, prior to use, or when unintentionally contaminated
Steps:
1. Fill first compartment of three compartment sink with hot water at least 100F with soap.
2. Fill second compartment with warm water.
3. Fill third compartment with a solution of 100ppm chlorine bleach
4. Confirm concentration of solution with chlorine test strip
5. Wash
6. Rinse
7. Submerge recently cleaned/rinsed equipment into sanitizing solution for minimum 30 seconds
8. Allow to air dry

Calibration of pH Meter
To be done: Daily
Steps:
1. Turn meter on and press calibration mode
2. Rinse probe in distilled water
3. Immerse probe in pH 7 buffer and press calibrate
4. Rinse probe in distilled water
5. Press calibration mode
6. Immerse probe in pH 4 buffer and press calibrate
7. Rinse probe in distilled water, store

Temperature of Refrigerator Unit and Product
To be done: Daily, prior to putting kombucha in the refrigerator and before removing kombucha from refrigerator
Steps:
1. Read temperature gauge attached to refrigerator unit.
2. Use probe thermometer to test temperature of liquid kombucha, test product in warmest part of refrigerator.

pH of Product

To be done: At the beginning of fermentation and after fermentation (* if flavoring kombucha pH to be tested after flavoring is added)

Steps:

1. Calibrate pH meter if it has not been done that day
2. Transfer a small amount of kombucha into a glass cup
3. Place pH probe fully into glass of kombucha
4. Wait for pH meter to confirm reading
5. Record pH reading, which batch it corresponds to, and at what stage of production the pH was read

Hand Washing

To be done: Immediately prior to beginning production, after cleaning/sanitizing, prior to putting on clean gloves, any time possible contamination of hands could have occurred

Steps:

1. Wet hands
2. Apply soap
3. Scrub for 15 to 20 seconds
4. Rinse with warm water
5. Dry with disposable towel

Note*: Other SOPs to consider including are prevention of cross contamination of food, food contact surfaces, food packing material (i.e., bottles, kegs); chemical storage/labeling; monitoring (i.e. temperature, pH, etc.) and record keeping.

Hazard Analysis Chart (B=Biological hazard(s); P=Physical hazard(s); Chemical hazard(s))

Process/ Step	*Possible Hazard*	*CCP*	*Critical Limits*	*Monitoring What/How*	*Monitoring Frequency*	*Who*	*Corrective Action*	*Verification*	*Record Keeping*
1. Receive Sugar/Tea	**B:** None **P:** None **C:** None	No	N/A	From approved source.	Every delivery	Self		Check of delivery receipt and ordering from approved supplier	Maintain receipts
2. Store Sugar/Tea	**B:** None **P:** None **C:** None	No	N/A	Condition of storage container seal.	Every use	Self		Visual checks of container(s)	N/A
3. Add boiling water to make sweet tea	**B:** None **P:** None **C:** None	No	N/A	Ensure SOPs are followed. Tea to steep for 20 minutes	Every batch	Self		Set timer for steep time	N/A
4. Transfer to Vessel for Fermentation	**B:** None **P:** None **C:** None	No	N/A	Follow SOPs	Every batch	Self			N/A
5. Add additional water and SCOBY CCP #1	**B:** Potential for enteric bacterial growth if starting pH is not acidic enough **P:** None **C:** None	YES	pH must read 4.6 or lower	Test pH using a calibrated pH meter	After adding the water and SCOBY to the tea mixture, prior to fermenting	Self	If pH does not read 4.6 or lower remove 1 cup of liquid from vessel then add 1 cup more of the SCOBY mixture, retest pH and repeat procedure until pH is below 4.6.	Daily calibration of pH meter (see SOP)	Record the pH of mixture prior to fermentation beginning
6. Allow tea to ferment for 7-10 days CCP #2	**B:** Potential for enteric bacterial growth if pH is not acidic	YES	pH must read 4.6 or lower. Not to be lower	Test pH using a calibrated pH meter	Check pH of beverage once it is done fermenting	Self	If the batch reads a pH higher than 4.6 after fermentation, discard batch as it is unknown how long batch may have been	Daily calibration of pH meter (see SOP)	Record pH readings of each batch after fermentation (include all

	enough **P:** None **C:** None		than 2.5		(before storing in refrigerator)		prone to bacterial growth. If pH is below 2.5 discard batch as consumption could cause acidosis due to low pH		batches, including discarded)
7. Store Vessel in Refrigerator	**B:** None **P:** None **C:** None	No	N/A	Follow SOPs	Every batch	Self		Monitor refrigerator temperature	N/A
8. Filter Kombucha	**B:** None **P:** None **C:** None	No	N/A	Follow SOPs	Every batch	Self			N/A
9. Transfer Kombucha into Cups	**B:** None **P:** None **C:** None	No	N/A	Follow SOPs	Every batch	Self			N/A
10. Store filled cups in Refrigerator	**B:** None **P:** None **C:** None	No	N/A	Monitor refrigerator temperature and temperature of kombucha. Follow SOPs	Every batch	Self		If refrigerator not cool have repaired and relocate product	N/A
11. Transfer 1/5 of Unflavored kombucha and SCOBY to another vessel for next batch	**B:** None **P:** None **C:** None	No	N/A	Ensure SCOBY is not discolored or shows signs of contamination	Every batch	Self	Discard if contaminated	Visually examine SCOBY for discoloration or mold. If any contamination, SCOBY to be discarded	N/A
12. Store previous batch starter and SCOBY	**B:** None **P:** None **C:** None	No	N/A	Monitor refrigerator temperature and batch temperature. Follow SOPs	Every batch	Self		If refrigerator not cool have repaired and relocate product	N/A