



Preserve Today, Relish Tomorrow

UCCE Master Food Preservers of El Dorado County

311 Fair Lane, Placerville CA 95667

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KOMBUCHA



Saturday, January 11, 2020

9:00 a.m. – 12:00 noon

Kombucha is a tangy, refreshing beverage from the past that is making a comeback. Kombucha is easy to make at home, and in this fun and informative workshop you'll get to make a batch of Kombucha to ferment at home, learn how to maintain your cultures, and explore ideas for flavoring your Kombucha.

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PART 1: BASIC FOOD SAFETY & SANITATION

When preparing food for preservation, cleanliness is essential in preventing food-borne illness, especially when handling foods that won't be cooked (including fruits and vegetables).

Step 1: Clean Your Work Area

Wash your sink and countertops with soap and warm water, rinse well, and dry with clean paper towels. Then apply a sanitizing solution such as bleach (1 scant teaspoon of liquid unscented bleach to 1 quart of water). Spray well and allow to air dry, or let sit for 30 seconds and wipe dry with clean paper towels. If using commercial sanitizers, follow the manufacturer's instructions. Wash and sanitize both before and after preparing food.

Step 2: Wash Your Hands

Wet your hands, apply soap, lather and then scrub for at least 20 seconds. Rinse well and dry with paper towels or a clean cloth. If using gloves, first wash your hands and then wash the gloves following these same procedures. Wash your hands again when switching tasks.

Step 3: Avoid Cross-Contamination

Be sure to use clean cutting boards and kitchen utensils, and wash them thoroughly before switching from one food type to another, or use separate boards and utensils for different types of foods (e.g., use one board for raw fish or meat and another board for vegetables, herbs, etc.). Wipe up spills promptly, and re-clean your work area as often as necessary.



QUICK TIPS

- use paper towels or a fresh clean dish towel to clean surfaces
- wipe up spills immediately with paper towels or a clean dish towel (and then put that towel straight into the laundry basket)
- change dish cloths and towels **every day**
- sanitize sponges between uses by using one of these 3 methods:
 - moisten the sponge and heat in a microwave for one minute
 - wash in a dishwasher with a drying cycle
 - soak in a bleach solution for one minute
- replace sponges frequently

FOOD SAFETY & SANITATION – CONT.**Step 4: Prepare Your Food**

Do not wash raw seafood, meat and poultry – doing so can spread pathogens and potentially cross-contaminate other foods. Wash **all** fresh produce, even if the skin or rinds won't be eaten. To wash produce, rinse under cool running water in a clean sink – do not soak.

QUICK TIPS

- *clean produce right before using*
- *gently rub soft fruits and vegetables (such as tomatoes) with your hands under running water to remove dirt*
- *scrub firm fruits and vegetables (such as potatoes, carrots, and melons) with a vegetable brush (don't forget to clean the brush!)*
- *remove outer leaves of lettuce and cabbage before washing*
- *rinse herbs and sprouts, then shake to remove excess water*
- *use a kitchen sink sprayer to rinse berries in a colander, gently turning and shaking the colander to remove dirt and excess water*

For more information on cleaning and sanitizing the kitchen using inexpensive and food-safe household products, check out this publication:

<https://extension.colostate.edu/docs/pubs/foodnut/kitchen-sanitize.pdf>

For general information on food safety, here are some good websites to visit:

www.foodsafety.gov

www.fightbac.org

<https://www.cdc.gov/foodsafety/cdc-and-food-safety.html>



PART 2: KOMBUCHA BASICS

Kombucha is a beverage made by fermenting sweetened tea, resulting in a cider-like, slightly effervescent drink. Like many other ferments, such as yogurt or sourdough or cheese, making Kombucha requires a starter culture or mother. Known as a *SCOBY* (Symbiotic Colony of Bacteria and Yeast), the mother culture, when mature, resembles a somewhat gelatinous pancake or big flat mushroom. Due to this appearance it is sometimes called a “mushroom” or “tea fungus”, but it is neither.

Kombucha contains beneficial live bacteria and yeasts, organic acids, B vitamins, antioxidants, and trace minerals. During the fermentation process, most of the sugar and caffeine are consumed. An 8-ounce serving of unflavored Kombucha has only 30 calories and about 2-3 grams of sugar. Fruit, herbs or spices can be added for additional flavor and carbonation.

So where did Kombucha originate? No one knows exactly, but it likely arose in China, where tea originated. The oldest legends date to 221 BCE, but other stories place the development of Kombucha in much later. Regardless of when or where Kombucha began, it is a refreshing and delicious alternative to soda.

TOOLS & SUPPLIES FOR MAKING KOMBUCHA

For the most part you will need no special equipment to start making Kombucha, other than your brewing and storage vessels. Here is a list of what you'll need to get started.

- ❖ Brewing vessel (glass, ceramic or other non-reactive material such as stainless steel) with a wide surface area, in a size slightly larger than (about 1.25 times) your batch size (see below for information about vessels for the continuous brew method)
- ❖ A fine-weave cloth or towel, or a coffee filter for covering the brewing vessel (do not use cheesecloth unless it is finely woven, such as butter or cheese muslin, because fruit flies can get through regular cheesecloth and contaminate your brew)
- ❖ A large rubber band for securing the cover
- ❖ Ladle
- ❖ Funnel (optional, but helpful for transferring the Kombucha to bottles)
- ❖ Bottles or jars for the finished Kombucha
- ❖ Heat wrap (optional, but helpful for brewing in cold climates)
- ❖ Fine-weave cheesecloth and/or a fine-mesh strainer for straining the Kombucha

INGREDIENTS FOR KOMBUCHA

WATER: Fresh un-chlorinated water is important for successful Kombucha brewing, as chlorine can interfere with the fermentation process. Kombucha also prefers water lower in mineral content (“soft water”) vs. hard water that contains high amounts of minerals. Tap water often contains chlorine or chloramines and may also contain fluoride, so check with your municipality to see if these chemicals have been added. Bottled water may come from springs, rivers or streams – or even municipal tap – so be sure to check the label carefully.

To remove chlorine from water, use a water purification filter; boil it for 20 minutes and allow to cool; or let it sit for 24 hours. *Note: Once chlorine is removed, refrigerate water to limit bacterial growth.* Note that boiling or using charcoal-based filters will not remove fluoride (and probably not chloramines), so check with the filter manufacturer for specifications.

To soften hard water, boil it for 15 minutes, cover and let sit for 24 hours, then skim off any scum and pour carefully so as not to disturb sediment on the bottom of the container.

TEA: True tea is made from *Camellia sinensis* leaves, with four main categories: White, Green, Oolong, and Black. These categories are determined primarily by how much the tea leaves are oxidized. A fifth type, called *Pu'erh*, is a fermented and aged tea which can also be used to make kombucha. Any tea type or combination of types can be used to make kombucha, although it is generally recommended that you start with 100% black tea for the first several batches. Avoid teas with oil (such as Earl Grey) or spices (such as masala chai), as the oils can interfere with fermentation and may lead to moldy SCOBYs.

Once you have some experience – and several strong healthy SCOBYs – you can experiment with blending teas, including using herbal teas. Herbal teas should be combined with at least 25% true tea, but 50-75% true tea is best. Because some herbal teas contain essential oils that can impact the health of the culture, use a backup SCOBY and maintain it separately, at least until you know that it is healthy and shows positive growth.

White Tea: Unprocessed, minimally oxidized. Liquor is very pale green or yellow. Flavor is flowery and delicate. Makes a mild, flowery-tasting Kombucha. When brewing Kombucha, it is best blended with black, oolong, or green tea.

Green Tea: Delicately processed, minimally oxidized. Liquor is green or yellow. Flavor ranges from toasty, grassy, to fresh steamed greens with mild astringency. Makes a lighter, softer Kombucha. The younger the green tea, the lower the brewing temp should be to prevent bitterness.

Oolong Tea: Partially oxidized, described as halfway between green and black. Rich floral or fruity flavors and smooth, soft astringency. Makes a milder, somewhat fruity and grassy Kombucha with an amber color. Oolong is a good base when flavoring for a 2nd fermentation.

Black Tea: Fully oxidized. Liquor ranges from dark brown to deep red. Strong flavor and astringency. Makes a bold, fruity-tasting and amber-colored Kombucha. Steep at a relatively high temp and moderate length of time for maximum flavor without bitterness.

SUGAR: For successful fermentation of Kombucha, sugar – in the correct proportions – is required. It is the source of fuel and provides the nutrients necessary to maintain the health of the SCOBY. Reducing the amount of sugar or fermenting for too long a period could starve the culture.

Sugar substitutes do not provide the necessary nutrients for Kombucha and are not recommended. Sugars or syrups from plants other than sugar cane such as agave, maple, or coconut palm can produce inconsistent results and may be hard on the SCOBY. These are not recommended for Kombucha. Less refined sugars have a higher mineral content and produce deeper flavors; these sugars may produce a more sour Kombucha. Honey contains bacteria that can compete with Kombucha SCOBYs. Use pasteurized honey only when making Kombucha.

White Cane (Table) Sugar: Refined sugar cane, pure white in color, and free of minerals. Good for brewing Kombucha.

Organic Cane Juice Crystals: Less refined than white sugar, pale blond in color, and low in mineral content. Very good for making Kombucha.

Brown Sugar: White sugar with molasses added back in, high in mineral content. Because it produces a yeasty Kombucha SCOBY and may shorten a SCOBY's life, it is not recommended for making Kombucha.

Turbinado or Raw Sugar: Slightly less refined than cane juice crystals, turbinado sugar has had most of the molasses removed. It has a medium mineral content, and like brown sugar it produces a yeasty Kombucha SCOBY and may shorten SCOBY life, thus it's not recommended for Kombucha.

Rapadura/Sucanat: These sugars are made from pressed and dried sugar cane juice and are high in mineral content. They are not recommended for brewing Kombucha.

PART 3 THE BASIC PROCEDURE FOR MAKING KOMBUCHA

PRIMARY FERMENTATION – SINGLE BATCH METHOD

The following recipe makes approximately 12 cups of Kombucha. You'll need a 1-gallon jar or other brewing vessel. The recipe can be scaled up or down depending on the size of your brewing vessel or desired amount of Kombucha.

12 cups water, divided
3 – 5 tea bags
 $\frac{3}{4}$ cup sugar
1 large SCOBY
1 cup Kombucha starter* liquid

1. Bring 4 cups of water just to a boil. Turn off the heat, add the tea, and allow to steep for 5 to 15 minutes.
2. Remove the tea bags, add the sugar, and stir until dissolved. Allow to cool.
3. Pour the remaining 8 cups of water into the brewing vessel and add the sweet tea. Be sure the liquid in the brewing vessel is at room temperature before continuing.
4. Add the SCOBY to the brewing vessel, then pour the starter liquid over the SCOBY.
5. Secure a cloth or paper cover over top of the brewing vessel with a rubber band and set it aside out of direct sunlight (if you are using a glass jar and don't have a pantry, cupboard or other dark place for fermenting, place a dishtowel(s) over the jar to block light).
6. Allow the Kombucha to ferment in a warm area with good airflow for 7 to 14 days (possibly up to 1 month). Kombucha likes warmer temperatures (72° – 85°F, with 78 to 80°F being ideal). The warmer the temperature, the quicker your Kombucha will ferment (small batches finish faster, as well). If possible, keep your fermenting Kombucha away from other ferments to avoid cross-contamination.
7. Start tasting your brew after 7 days (as early as 5 days if it's really warm). Stop fermenting when the Kombucha reaches the taste you like (the longer you ferment, the more sour the Kombucha will become).
8. Remove the SCOBY (including the "baby" or "daughter" SCOBY that grows from the original, or "mother" SCOBY) to a clean jar or storage vessel (see the section on SCOBY Hotels below). Using a ladle, take 1 to 2 cups of Kombucha from the TOP of the brewing vessel and add it to the SCOBY Hotel.

9. Transfer the finished Kombucha to storage bottles or jars either directly or by first straining through cheesecloth or a fine-mesh strainer, leaving very little head space. Cap tightly and store at room temperature for 1 to 3 days to build up carbonation, or refrigerate immediately. For a secondary fermentation instructions and tips, see Part 4.
10. Secondary fermentation with batch method: Remove the SCOBY as described in Step 8. Using a ladle, take 1 to 2 cups of Kombucha from the TOP of the brewing vessel and add it to the SCOBY Hotel. Add your flavoring agent(s) of choice (see below), and replace the cloth cover. Let ferment at room temperature for 1 to 3 days. Strain the Kombucha to remove the flavorings and excess yeast, and then transfer to bottles and cap tightly. Refrigerate immediately, or allow to sit at room temperature for 1 to 3 days to build carbonation, and then refrigerate

PRIMARY FERMENTATION – CONTINUOUS BREW METHOD

The Continuous brew method, versus the Batch method described above, is a safe and convenient way to make Kombucha. Because handling of the SCOBY is minimized, the risk of contamination is lower, as is the amount of time and effort required to brew your Kombucha. You can also brew larger amounts at one time (generally 2 to 5 gallons).

You'll need a food-safe (glass, ceramic, or stainless steel) brewing vessel with a spigot. A 2-gallon vessel will make 1 ½ gallons; large households or serious home brewers may want a 5-gallon vessel, which will make 4 gallons of Kombucha. The spigot of your vessel should be non-corrosive and leak-proof.

The process of continuous brewing is essentially the same as with the batch method. The following recipe is for a 2 ½-gallon vessel (to make about 2 gallons of Kombucha).

2 gallons water, divided
8 – 12 tea bags
2 cups sugar
2 large SCOBYs
2 – 4 cups mature starter liquid

1. Bring 2 quarts of water just to a boil. Turn off the heat, add the tea bags, and allow them to steep for 5 to 15 minutes.
2. Remove the tea bags, add the sugar, and stir until dissolved. Allow to cool.
3. Pour the remaining 6 quarts of water into the brewing vessel and add the sweet tea. Be sure the liquid in the brewing vessel is at room temperature before continuing.
4. Add the SCOBY to the brewing vessel, then pour the starter liquid over the SCOBY.
5. Secure a cloth or paper cover over top of the brewing vessel with a rubber band and set it aside in a warm location with good air flow and out of direct sunlight (if using a glass vessel and you don't have a pantry, cupboard or other dark place to ferment your Kombucha in, place a dishtowel(s) over the vessel to block light). If possible, keep your fermenting Kombucha away from other ferments to avoid cross-contamination.
6. Allow the first batch to ferment for 10 to 28 days.
7. Once the Kombucha has reached a taste you like, decant your desired amount. Take no more than one-third of the total volume from the initial batch. Once your Kombucha has matured (after 3 to 5 cycles), you can remove up to two thirds of the vessel amount, although it's recommended to generally remove no more than 50%.

8. Transfer the decanted Kombucha to a large jar or individual storage bottles (you can also decant it directly into bottles). Flavor the brew if desired (see Secondary Fermentation above), cap it tightly, and store at room temperature for 1 to 3 days to build up carbonation, or refrigerate immediately.
9. Refill the brewing vessel with cool sweet tea, gently pouring it along the side of the vessel to limit disturbing the SCOBY. To make 1 gallon of sweet tea, steep 4 – 6 tea bags in 4 cups of hot water for 10 to 15 minutes. Remove the tea bags, add 1 cup of sugar and stir to dissolve. Add the remaining water, then cool to room temperature.

Your continuous brewing vessel will need occasional maintenance. Once your mother SCOBY becomes too thick, or if the Kombucha becomes too sour too quickly or looks like it has too much yeast, you'll need to do some upkeep. How often you perform maintenance is a preference, although once or twice per year is about average.

To perform maintenance, remove the mother SCOBY to a clean bowl. Start trimming the SCOBY by removing the oldest layers from the bottom of the SCOBY (they will be darker in color) by pulling off the layers or by using a serrated knife or scissors. Then trim away gelatinous pieces from the sides, leaving a healthy white or tan SCOBY. Next cut the SCOBY down to about $\frac{3}{4}$ of the diameter of the brewing vessel and no more than $\frac{1}{2}$ " thick (you can cut the SCOBY down into layers or into pieces that equal this amount). Return the trimmed SCOBY to the bowl, and transfer the extra pieces to a SCOBY Hotel if you wish to keep them for future use (see the section on SCOBY Hotels below).

Next, remove at least 5 cups of Kombucha from the vessel to use as a starter liquid (the more reserved and used as a starter, the quicker the next batch will ferment). If the liquid is cloudy, filter it through a strainer or cheesecloth. Pour the Kombucha over the SCOBY in the bowl, then cover the bowl with a clean towel. Decant the remaining Kombucha in the brewing vessel into bottles or a SCOBY Hotel.

Remove and disassemble the spigot from the empty brewing vessel, then clean it well under hot running water. Use a toothpick if necessary to dislodge any bits of SCOBY that may have grown inside the spigot parts. Then rinse out the brewing vessel with hot non-chlorinated water (alternatively wash with soap and hot water, rinse well, and then cure the vessel with pasteurized – not raw – vinegar). Replace the spigot and test it for leaks. Lastly, add the SCOBY and reserved starter liquid, and proceed with a new batch following the recipe above.

Sink or Swim?

SCOBYs can float on the surface of your brew, sink to the bottom of the brewing vessel, or hover somewhere in the middle. The position of the SCOBY (and which side faces up) does not affect the Kombucha. Regardless of where the "mother" SCOBY is, the new "baby" SCOBY will grow on the surface.

MAINTAINING YOUR SCOBYs (THE "SCOBY HOTEL")

Start a SCOBY Hotel to house your extra SCOBYs. Add them to a clean, large glass jar with 2-4 cups of starter liquid, and cover with a tight-weave cloth secured with a rubber band. Reserve a cup or more of kombucha each time you brew to add to the jar along with the SCOBY.

Maintain your SCOBY Hotel periodically to keep your SCOBYs healthy. If the top SCOBY grows too thick (more than 1"), it can prohibit oxygen from reaching the liquid below it and stagnate or kill off the bacteria and yeast. Remove the SCOBY to a separate container, cover with a clean cloth, and let it drain for a bit for easier handling. Then pull it apart into layers or trim it with a serrated knife or sharp scissors. While the big thick SCOBY is draining, remove the other SCOBYs as necessary, one at a time, trimming off dark bits and gelatinous edges, and return them once they're cleaned to the Hotel.

Dark and cloudy liquid is a sign of excess yeast, which needs to be removed (generally every 2 to 6 months). To do so, move the SCOBYs to a container and cover with a cloth. Pour the liquid through a fine-mesh strainer or cheesecloth. Large strands of yeast will not pass through, but sufficient yeast will remain in the liquid. Do not rinse the SCOBYs, but if necessary pull off large clumps of yeast. Rinse the Hotel with hot non-chlorinated water, scrubbing it if necessary (alternatively wash with soap and hot water, rinse well, and then cure with pasteurized – not raw – vinegar) and return the SCOBYs to the Hotel. Pour the filtered liquid over the SCOBYs, add some sweet tea, then cover with a cloth.

Add sweet tea as needed to replace evaporated liquid and to keep the SCOBYs submerged. Sweet tea also provides food for the SCOBYs. Cover the Hotel with a cloth (as opposed to a lid) for at least a few weeks after adding sweet tea so that it can ferment properly.

To make sweet tea for your SCOBY Hotel, steep 1 tea bag in 2 cups of hot water, add 2 tablespoons of sugar and stir to dissolve, then cool to room temperature.

A SCOBY will generally be viable for at least 10 brewing cycles. If it stops performing or becomes mushy or it grows jellylike on the edges, discard it.

KOMBUCHA SAFETY & PRECAUTIONS

To avoid contaminating your SCOBY, make sure your hands are scrupulously clean – your work area and tools too! – and that your brewing vessel is clean as well. To clean your brewing vessel, wash it with hot non-chlorinated water, or wash with hot soapy water (avoid anti-bacterial soaps as these may interfere with fermentation), rinse very well, and then "cure" the vessel with pasteurized vinegar (do not use raw vinegar).

If you see any signs of mold (such as fuzzy blue, gray, green, brown, or black areas), throw away the SCOBY and the Kombucha and wash the vessel thoroughly. You may see brown strands or strings floating through the Kombucha, attached to the underside of the SCOBY, or accumulated at the bottom of the brewing vessel. These are yeast that have collected together; they are safe and are a normal part of Kombucha fermentation. If you are not sure whether you have mold or just a funny looking SCOBY, you can look at images online, such as <https://www.kombuchakamp.com/kombucha-mold-information-and-pictures>.

There are trace amounts of alcohol left from the fermentation process that in some cases may exceed 0.5 percent alcohol by volume (ABV), which exceeds the legal limit for non-alcoholic beverages. In most cases the residual amounts do not exceed 1% ABV, and they naturally top out at around 2% ABV. These amounts are non-inebriating, but to reduce the amounts you can avoid fruit and other sugary flavorings; refrigerate the Kombucha quickly; leave more headspace in the bottles; or dilute individual servings with water.

HOW MUCH KOMBUCHA SHOULD I DRINK?

When consuming any new food or beverage, including Kombucha, start with small amounts. Drink up to 4 ounces per day with plenty of water, observe your own body's reactions, then gradually increase your consumption.

PART 4: KOMBUCHA SECOND FERMENTATION

Second fermentation is the process through which you flavor your brew and put it into a sealed container, which traps carbonation into the liquid. It typically takes 2-4 days, but can take longer.

It's essentially bottle conditioning (similar to how in beer and champagne-making, you add a little bit of priming sugar, then seal it up to let yeasts eat up the sugar and convert it into carbon dioxide). That's what makes it fizzy. In the case of Kombucha, that added sugar typically comes from fruit.

A secondary fermentation can be done in the original brewing vessel or in separate bottles or jars, although 2F done in the storage bottles is best consumed within a few weeks, as flavoring agents left in the bottles can end up causing off flavors. Add clean, cut fruit or fruit juice and whatever herbs or spices you desire. Ginger, lemon, and berries are common additions, but let your taste buds guide you and feel free to experiment (see Part 4 below for information on flavor pairings). Keep in mind that ginger, blueberries and strawberries can increase carbonation, so you may need to "burp" your bottles to release excess CO₂.

To flavor Kombucha, add about 5% or so of the bottle/vessel capacity. Cut fruit into small pieces, or use fruit purées or juice. Purees and juice, as well as powdered herbs and spices, can increase carbonation, so reduce the amount (or open the bottles carefully!).

So how much is that 5%? A little flavoring goes a long way, especially if you've cut the fruit small (more surface area means more flavor gets dispersed). A tablespoon or so of fresh fruit or a pinch of herb in a batch may be all you need.

BOTTLING KOMBUCHA FOR SECOND FERMENTATION (F2)

1. Add 1/4 - 1/3 cup of pureed/juiced fruit into each 16 oz. bottle*. Most gallon batches yield approximately 7 bottles.
2. Remove your SCOBY and 2 cups of Kombucha from your brewing vessel and set it aside.
3. Reserve this for your next batch of Kombucha. This starter tea + SCOBY combo will be what you use to make a future batch of Kombucha!
4. You can keep it in a SCOBY hotel for future use. Or just put it temporarily in a spare bowl if you plan to use it immediately to make your next batch of Kombucha.
5. Stir the remaining Kombucha in the brewing vessel. The stirring will distribute the yeast and bacteria throughout the liquid. This will help make your carbonation more consistent across all your bottles.
6. Pour the Kombucha (you can use a pitcher + funnel) into your bottles, leaving 1/2 - 1 inch of headspace at the top of each bottle.
7. Dry the tops of the bottles and make sure the lids are dry as well.

8. Seal tightly! If your bottles have screw-on lids, I like to use rubber grippers to make sure they're sealed as tight as possible.
9. Let the bottles ferment for another 2-3 days at room temperature. There's a slight risk for over-carbonation and explosions if the glass bottles are poor quality and/or your fruit purees are really aggressive. Just to be safe, keep them in a closed cabinet or ice chest to contain any mess.

Note: Beer bottles are usually made of thin glass so if you opt to use them, I don't recommend leaving them at room temp. for longer than 1 day before moving to the fridge. This will minimize the risk for glass breakage. Or don't use beer bottles at all!

10. After a couple days at room temperature, move them to the fridge. Once they're chilled, open one to test it out. The cold will help keep the carbon dioxide in the liquid, so it's less likely to fizz over and make a mess when you open it. The longer you F2 in the bottle at room temp, the more carbonation builds up, so be sure to move them to the fridge after a couple days to pause the fermentation process and prevent over-carbonation.

A Word About Storage Bottles

The more carbonation... more during fermentation, the greater the risk of your bottles exploding. Choose bottles with thick glass, such as heavy swing-top ("Grolsch-style") bottles. Round bottles tend to break less due to more even pressure distribution, so avoid bottles with square sides. Recycled thick beer bottles and the like are also options. Some people use wine or champagne bottles so that if too much carbonation builds up the corks will pop before the bottles break, but you may end up with a geyser – and thus still have a big mess on your hands. Mason jars are also an option, just be sure to keep the top of the Kombucha away from any metal and choose an airtight lid.

SUGAR CONTENT MATTERS WITH CARBONATION

If you're looking to boost carbonation, you need to flavor your bottled Kombucha with something with at least a bit of sugar (most fruit has at least some natural sugar in it). This is essentially bottle conditioning your Kombucha by giving the yeasts in the bottle something to eat (sugar from the fruit). The yeasts will eat sugar and produce carbon dioxide. The carbon dioxide is trapped in the liquid since it's in an airtight container. In general, the sweeter the flavoring, the more potential you have for great carbonation.

SHOULD I BURP MY BOTTLES

A lot of home brewers recommend burping your fermenting bottles. Instead, it is recommended to leave them alone for 2-3 days, then move the bottles to the fridge. When they're totally chilled test one for carbonation levels.

WHAT IF IT'S NOT FIZZY ENOUGH?

If you want more carbonation, you can bring the whole batch of bottles back out to room temperature and let them continue fermenting for another day or so. Then chill and test another bottle to see if the carbonation levels are better. Some flavors get perfectly fizzy in 3 days, and other flavors may need a full week before achieving the desired carbonation level. The temperature, flavorings, bottle, etc. all affect the timing of carbonation here.

PART 5: KOMBUCHA FLAVOR IDEAS

You can flavor your Kombucha with almost anything you like! There's no set recipe when it comes to flavoring, you'll have to rely on trial and error based on your personal preferences. When it comes to flavoring your Kombucha, you are limited, really, only by your own creativity. Feel free to experiment!

Fresh fruit purees or juices

Using fruit purees and juices are a great way to flavor Kombucha. A big key to help the yeasts access their food source (a.k.a. the sugar in the fruit) can be done by breaking down the fruit into a fresh fruit puree using a juicer or blender.

Fresh/frozen fruit pieces

Many home brewers use a few fresh or frozen fruit slices or chunks in their Kombucha. This is a great option if you want more subtle fruit flavor in your Kombucha and you want the flavor of the tea itself to shine. However, using this method made not produce enough carbonation. If the yeasts can't access the sugar, they can't eat the sugar and turn it into carbon dioxide. So if you like to use fresh fruit pieces but find that the brew producing the fizz you want, try adding a teaspoon of sugar to your bottle in addition to your fruit before sealing it. Sometimes the yeast just needs a bit more food to eat to create fizz.

Fresh or dried herbs

Herbs are a great addition to Kombucha and are wonderful paired with fresh fruit flavors. Fresh herbs or very good quality dried herbs (make sure it's still fragrant!) are best. Old dried herbs can impart a musty smell on your Kombucha, so its best to avoid. Also, be sure to use them sparingly since herb flavors can intensify over time as they steep in the liquid.

Herbal and Flavored Tea

Using herbal or flavored teas as flavorings during second fermentation along with a bit of sugar (around a teaspoon per bottle) to stimulate carbonation can provide a delicious flavoring for the second fermentation.

Example: for every gallon of Kombucha Tea you can add:

- 1-2 cups of fresh or frozen fruit; or
- 1/2 cup – 1 cup of fruit puree; or
- 1/2 - 1 cup of dried fruit; or
- 1-2 cups of fruit juice; or
- 1/2 - 1 cup fresh fruit juice; or
- 1/2 - 1 cup fresh herbs or spices; or
- 2-3 bags of herbal teal or 1/4 cup bulk herbal tea; or
- 2-3 teaspoon ground dried spices

Kombucha Flavor Ideas

Mixed Berry and Lavender

- 1/2 cup frozen organic mixed berries (strawberries, blackberries, and blueberries)
- 1 tsp. organic dried lavender

Strawberry Lemonade:

- 5 frozen strawberries
- 1 juiced lemon.

Strawberry and Basil

- 5 frozen organic strawberries
- 2 fresh basil leaves – gently torn

Orange Dream:

- 1/2 cup tangerine juice,
- 1/2 tsp. tangerine rind
- 1/2 tsp. vanilla extract

Spicy Lemon Drop:

- 1 inch chopped, peeled fresh ginger,
- Juice from half a lemon,
- 1/3 cup raw honey

Jasmine Mixed Berry:

- 2-3 Tbsp. jasmine loose leaf tea
- 1/2 cup frozen organic mixed berries

Spiced Mango:

- 1 inch chopped and peeled fresh ginger
- 1/2 cup organic frozen mango

Spicy Pineapple:

- 1/2 cup organic cut pineapple
- 1 inch peeled and chopped ginger.

Lemonade with a twist:

- Juice from 1/2 lemon,
- 1/2 tsp. anise seeds,
- 1/2 tsp. vanilla extract

Strawberry Hibiscus:

- 5 frozen organic strawberries
- 2-3 Tbsp. organic dried hibiscus petals

Apple Cinnamon:

- 1/2 cup organic apples juice
- 1-2 organic cinnamon sticks

Ginger Berry:

- 1/2 cups pure blueberry juice*
- 1 Tbsp. fresh ginger peeled & grated
- 6 frozen blueberries

Kombucha Recipe Ideas**Kombucha Mustard Garlic Salad Dressing****Ingredients:**

- 1/4 cup Kombucha primary, fermented into vinegar
- 1 Tbsp. Dijon mustard
- 2 cloves minced garlic
- 1/2 tsp. salt
- 1/2 cup olive oil

Instructions:

1. Add Kombucha, mustard, garlic, and salt to a pint jar. Place the lid on and shake until well combined.
2. Add olive oil to mixture and shake again to combine.
3. Drizzle over green salad or raw vegetables.

Asian Inspired Kombucha Dressing**Ingredients:**

- 1/4 cup honey
- 1 Tbsp. sesame oil
- 1/4 cup olive oil
- 1/2 cup Kombucha primary vinegar
- 1/2 cup rice vinegar
- 3 Tbsp. soy sauce
- 2 Tbsp. minced fresh ginger
- 3 garlic cloves, minced
- 1 tsp. red pepper flakes

Instructions:

1. Combine all ingredients in a small jar, place the lid on tightly, and shake well to combine. It may need to be shaken again just before being poured over the salad or vegetables.
2. Serve over a salad to go along with an Asian-themed meal of stir-fry, eggrolls, or fried rice.

Kombucha Jello *Makes (1) 9×13 pan or (2) 8×8 or 9×9 pans***Ingredients:**

- 4 cups Kombucha primary
- 1/8 to 1/4 cup or more raw honey (optional)
- 5 tablespoons unflavored gelatin

Instructions:

1. In a large measuring cup or bowl, sweeten Kombucha to taste with raw honey.
2. Put 2 cups of the Kombucha in a pot on the stove.
3. Sprinkle gelatin all over.
4. Whisk in well until smooth with no lumps.
5. Turn on heat to low and heat until thickened — should be barely warm to get thick.
6. Remove from heat.
7. Add the honey to the thickened Kombucha.
8. Stir well.
9. Pour into pan(s).
10. Chill for a few hours until set.
11. Cut into squares and serve. Keep refrigerated.

Mixed Berry Kombucha Gummy Snacks**Ingredients:**

- 1 1/2 cups chopped berries (I used pitted cherries and strawberries)
- 1 cup Kombucha (use berry flavored Kombucha for extra berry goodness)
- 4 tablespoons high-quality gelatin
- 2 tablespoons honey or agave syrup

Instructions:

1. Puree berries in a high-speed blender or food processor.
2. Pass through a fine mesh sieve into a large bowl to remove any seeds to yield 1 cup of fruit puree.
3. In a small pot over very low heat, warm the Kombucha gently for about 1-2 minutes.
4. Gradually whisk in gelatin until dissolved.
5. When gelatin has dissolved completely, quickly whisk in fruit puree and honey.
6. Pour mixture into molds and chill for 1-2 hours or until solid.
7. Store in the refrigerator in an airtight container.

The information in this handout is provided as a courtesy to the reader. No endorsements of commercial products are made or implied, nor is criticism implied of similar products or information from companies not listed. Products are intended for home use only.

Resources:

National Center for Home Food Preservation. <http://nchfp.uga.edu>
Colorado State University Extension, Understanding and Making Kombucha.
Crum, Hannah & Alex LaGory. *The Big Book of Kombucha*