



Learn to Make Kombucha

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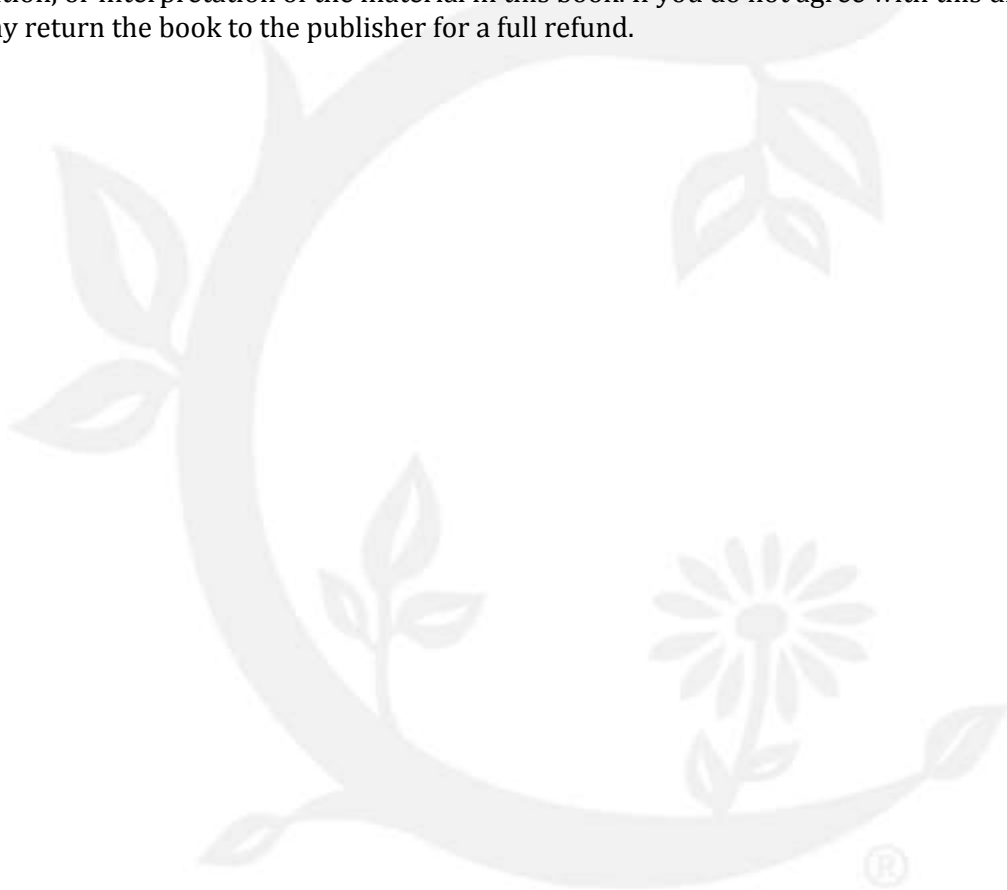
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WHAT IS KOMBUCHA?

Many people around the world have been drinking fermented tea for many hundreds of years, calling it by various names and praising its probiotic benefits as well as its refreshing flavor.

But did you ever wonder what it is that makes this magical drink, and how it works?

You're probably familiar with that leathery pancake we call a [Scoby](#). That stands for Symbiotic Culture of Bacteria and Yeast. "Symbiotic" means that the bacteria and yeast strains live together in a complex, mutually supportive community, supporting and depending on each other. The Scoby is sometimes called the mushroom, because it resembles the smooth, thick body of a mushroom.

The specific bacteria and yeast strains in the Kombucha are what make it act the way it does, and what produce the fizz and flavor we expect from Kombucha. Not all Kombucha cultures will contain the exact same strains, but generally, these are some that you might expect:

Acetobacter: This is an aerobic (requiring oxygen) bacteria strain that produces acetic acid and gluconic acid. It is always found in Kombucha. *Acetobacter* strains also build the Scoby mushroom. *Acetobacter xylinoides* and *acetobacter ketogenum* are two strains that you might find in Kombucha.

Saccharomyces: This includes a number of yeast strains that produce alcohol, and are the most common types of yeast found in Kombucha. They can be aerobic or anaerobic (requires an oxygen-free environment). They include *Saccharomyces ludwigii*, *Saccharomyces apiculatus*, *Schizosaccharomyces pombe*, *Zygosaccharomyces*, and *Saccharomyces cerevisiae*.

Brettanomyces: Another type of yeast strain, either aerobic or anaerobic, that are commonly found in Kombucha and produce alcohol or acetic acid.

Lactobacillus: A type of aerobic bacteria that is sometimes, but not always, found in Kombucha. It produces lactic acid and slime.

Pediococcus: These anaerobic bacteria produce lactic acid and slime. They are sometimes, but not always, found in Kombucha.

Gluconacetobacter Kombuchae is an anaerobic strain of bacteria that is unique to Kombucha. It feeds on nitrogen that is found in tea, and produces acetic acid and gluconic acid as well as building the Scoby mushroom.

Zygosaccharomyces Kombuchaensis is a yeast strain that is unique to Kombucha. It produces alcohol and carbonation as well as contributing to the mushroom body.

Kombucha also contains a variety of other nutrients, particularly various acids and esters that give the drink its characteristic tang and fizz. Included in these components is gluconic acid, which is the primary difference between the makeup of Kombucha and the makeup of apple cider vinegar!

The actual bacteria, sugar, and acid content of Kombucha depends on many factors, including the

culture you begin with, the type of tea used, the type of sugar used, the strength of the tea, the type of water, the length of time brewing, the temperature at which it is cultured, and more.

While different Scobys may vary in their exact makeup, what is common to all Kombuchas is gluconic acid, acetic acid, and fructose.



OBTAINING A KOMBUCHA SCOBY

A [Kombucha Scoby](#) (also known as a starter culture, mother, mushroom, etc.) is a necessary component if you wish to make Kombucha Tea. There are generally three ways to obtain a Scoby: 1) Get one from an acquaintance, 2) Purchase one from a reputable source or 3) Grow a Scoby from a bottle of raw Kombucha tea.

GETTING A KOMBUCHA SCOBY FROM AN ACQUAINTANCE

If you know someone who makes their own Kombucha at home, odds are good they will have an extra Kombucha Scoby to share as each batch of Kombucha made will generally yield a new extra Scoby. When picking up your new Scoby, be sure to bring the Scoby home in a glass jar, covered in at least a half cup of Kombucha tea (it's important the Scoby does not dry out and the tea is useful for making your first batch). If the jar has a metal lid, be sure to put a piece of plastic wrap or something similar between the Scoby and the lid so there is no danger of the Scoby coming in contact with the metal, which can be detrimental to the health of the Scoby. Once you get the Scoby home, we recommend making your first batch of Kombucha immediately. If you must delay a day, be sure the Scoby is completely submerged in Kombucha tea and is kept in a spot that is reasonably cool and dry. If it is going to be more than a day or two before you make the Kombucha, you can refrigerate the Scoby and the tea, but this will put it into a state of hibernation and it will take a few days to come out of it, adding time to the process.

PURCHASING A KOMBUCHA SCOBY

We offer high quality [Kombucha Scobys](#) on our website. Our cultures are grown in a licensed commercial food-processing facility using only organic black tea, organic sugar, and filtered water. We ship our Kombucha Scobys in a dehydrated state for safe transit. Dehydration preserves the vital yeast and bacteria while also limiting the risk of spoilage and potential for food poisoning. (We value your safety!)

GROWING A SCOBY FROM KOMBUCHA TEA

If you have access to bottled raw Kombucha from your local health food store, it is possible to grow a Kombucha Scoby. The process is relatively simple: essentially you will be taking a bottle of Kombucha and allowing it to ferment further which will result in a new Kombucha Scoby.

Why it works: Once a batch of Kombucha is finished brewing, the Scoby used to make the brew is removed and the Kombucha is either consumed or in the case of commercial brands, bottled for sale. Even without the Scoby, the yeast and bacteria that comprise the Kombucha continue to work, converting what tea and sugar remain in the brew fermenting it further. A new Scoby is a by-product of this fermentation process. Removal of the Scoby and air-tight bottling do slow the process down significantly, but it does not stop the process completely. In fact, it is quite common to see a gelatinous blob in your bottled Kombucha. That blob is actually an immature baby Scoby and is good evidence that the yeast and bacteria are hard at work even under less than ideal conditions. The process detailed below for growing your own Scoby essentially improves the conditions for the Kombucha so it can more effectively work to continue fermenting the brew and produce a new Scoby for you to use.

INSTRUCTIONS FOR GROWING A KOMBUCHA SCOBY

1. Purchase a bottle of Kombucha from your local store. Be sure the Kombucha is raw (not pasteurized). This is important because even after a culture has been removed from a batch of Kombucha, the active yeast and bacteria in the brew can continue to work to create a new culture. Pasteurization kills the necessary yeast and bacteria. Ideally, choose a bottle of raw Kombucha that is unflavored so no other ingredients potentially interfere with your Scoby growing process.
2. *Optional Step:* Make about a cup of black or green tea. While the water is hot, add 1-2 tablespoons of regular white sugar (more is better than less). Mix until the sugar is thoroughly dissolved and then allow the sugared tea to cool completely to room temperature. While not critical to the process, adding a cup of sugared tea to the bottle of ready-made Kombucha gives the yeast and bacteria additional food to eat during the process of growing a new culture. Essentially the cup of sugared tea increases the odds of successfully growing a new Scoby. [Click here](#) to learn more about choosing the best teas and sugars to use when brewing Kombucha.
3. Find a clean glass container (pint- or quart-size canning jars work well). Ideally the size of the jar will allow the liquid a fairly limited surface area (no more than about 3 inches in diameter) and allow for several inches or more of depth. A larger surface area will cause the mixture to ferment too quickly and not leave time for a new Scoby to develop properly. Be sure the jar is free of any soap or food residue the dishwasher may have missed. If in doubt, give it a good rinse. Do not use plastic, metal, or ceramic as they can be detrimental to the process. Pour the bottle of Kombucha and the cup of sugared tea into the clean glass jar. Please note: there may already be a floating jelly-like blob or brown blobs or stringy particles in the liquid. These are good things! The jelly-like blob is actually the very beginning of an immature Scoby and a good sign your Kombucha contains the active yeast and bacteria necessary to complete this process.
4. Cover the jar with a tight-weave dish towel, multi-layered tight-weave cheese cloth (such as butter muslin), a paper towel, or a paper coffee filter. Secure the covering with a tight rubber band. This type of covering system allows gas created by the Kombucha during the fermentation process to escape while keeping out bugs and most foreign yeasts and bacteria.
5. Allow the jar to sit in a safe location, out of direct sunlight and away from any direct heat sources. Ideally, place the jar where the ambient temperature is between 70° and 80° (keeping in mind potential temperature shifts at night). Too cool a temperature will slow down the process significantly. Too warm a temperature can cause the brew to ferment too quickly not leaving enough time for the new Scoby to develop. It is also important not to move or otherwise disturb the jar during the process.
6. Wait about a week before taking a peek. While the timeline can be influenced by a number of factors, the most important of which is temperature, after a week it is common to see a baby Scoby developing across the surface of the liquid. Please note: a new Scoby starts off as a clear film or blob and then slowly becomes less translucent and more white, and increases in thickness as time goes on. If you don't see any signs of Scoby development after 3 weeks, discard the batch and start over. We recommend waiting until the Scoby is at least ¼ inch thick before using it to brew your first batch of Kombucha tea. Reaching that thickness will generally take 14-30 days. Be sure to retain the Kombucha tea used to grow your Scoby to make your first batch of Kombucha.
7. While growing your new Scoby, watch out for signs of mold (black, green, or orange spots). Brown spots, brown blobs, or brown stringy particles are byproducts of the yeast

and are not a concern. If mold does develop, discard the entire batch, clean the container thoroughly with pure vinegar, and try again with a new bottle of Kombucha.



CHOOSING EQUIPMENT FOR BREWING KOMBUCHA TEA

If you want to make Kombucha tea at home, there are a few supplies that you will need to gather, primarily a brewing vessel and a cover for the container. Beyond that everything else is optional.

KOMBUCHA BREWING CONTAINER

The vessel used to brew your Kombucha is perhaps one of the most important decisions that must be made before the process can begin. While a number of options exist, in terms of materials some are clearly superior to others.

Glass. Glass is hands down the best option for brewing Kombucha. Glass won't react to the acidity of the brew. Unlike plastic, glass doesn't scratch easily (damage to the container can harbor foreign bacteria) nor does it generally contain chemicals such as BPA. Glass containers are also relatively easy and inexpensive to obtain. Good options include larger-size canning jars and glass storage jars (generally found in half-gallon and gallon sizes). Larger glass jars with spigots for [continuous brew systems](#) are becoming quite popular. While these can be very handy, a word of caution. Be sure the spigot set-up is made of plastic and not metal that can damage the Kombucha SCOBY.

Plastic. Although plastic can technically be used to brew Kombucha, we do not recommend it for several reasons. First, plastic can be damaged and scratches in the plastic can harbor foreign bacteria. Second, plastic often contains undesirable chemicals (even food-grade plastic) that can be harmful to the Kombucha SCOBY. In short, using plastic to brew Kombucha greatly decreases the odds of brewing a safe batch.

Ceramic. Do not use ceramic as most of the glazes used to coat ceramic contain lead.

Porcelain. Food grade porcelain is generally safe for brewing Kombucha. Avoid non-food grade porcelain pieces such as vases or decorative pottery.

Crystal. Crystal contains lead. Do not use crystal to brew Kombucha.

Metal. Metal is generally detrimental to Kombucha and should not be used for a brewing vessel or for any item that will have contact with the SCOBY. The only possible exception is stainless steel. Because it does not contain iron, some brewers feel it is a reasonable alternative to glass. While we do not recommend using it, some people have success doing so.

Besides the material from which the vessel is made, there are several other factors to consider when choosing a container for brewing Kombucha.

Size. Kombucha can be brewed in a quart canning jar or a large wood barrel provided the correct ingredient ratios are maintained. On a practical level, when choosing the size of your brewing container, consider how much Kombucha you will consume as each batch of Kombucha will take 7-30 days to brew (keep in mind that you will always want to make extra to use as starter tea for your next batch). If you will be preparing your brew in one place (e.g., the kitchen) and letting it ferment in a different spot, it is also important to consider how heavy the container and brew will be and whether or not you will be able to move it safely. Also consider whether you will need to lift the jar

to pour out the finished brew once the Kombucha fermentation process is complete. In addition to container weight, the Kombucha tea will add about 8 pounds per gallon.

Surface Area. The size of the liquid surface area will influence the rate at which your Kombucha brews. Kombucha brewed in a bowl with a 9" diameter opening will brew significantly faster than Kombucha brewed in a jar with a 3" diameter opening. Faster isn't necessarily better, however, as the Kombucha can turn to a strong vinegar taste in a relatively short period of time.

Spigots. Many brewers are now using containers with spigots located near the bottom of the jar for easy removal of the finished Kombucha. While this method is handy, you must be sure the spigot is plastic and not metal (check the portion of the spigot inside the jar too). Also make sure the spigot is sturdy as they sometimes will break off when the jar is being moved, resulting in a huge mess.

Lids. While a lid should not be used during the fermentation process, having a container with a lid to use for storing the Kombucha after fermentation is complete and the culture removed can be quite handy. Alternatively, finished Kombucha can be transferred to other storage jars or bottles.

COVERING THE KOMBUCHA BREWING CONTAINER

It is important to employ an effective cover system for your Kombucha brewing vessels. Bugs such as fruit flies or ants as well as transient yeasts and bacteria from the air can easily find their way into your Kombucha and ruin the whole batch. An effective cover system should not be air-tight but rather allow the mixture to breathe as the process benefits from oxygen and will also result in gas that needs to be expelled. Effective coverings include tight-weave dish towels or fabric, multi-layered tight-weave cheese cloth (known as butter muslin), paper towel, paper coffee filter, etc. The cover should then be secured with a tight rubber band as not doing so invites ants and fruit flies to sneak under the cover. Do not use a tight lid. Doing so will inhibit airflow needed for effective fermentation and also allow gas to build which can make removing the cover dangerous. Undesirable covering options include loose-weave fabric or screens, which will not keep out tiny bugs or transient yeasts and bacteria.

ADDITIONAL SUPPLIES FOR BREWING KOMBUCHA

While only a vessel and covering are required for brewing Kombucha, there are several additional items that are useful as well. Please note: it is critically important to the health of the SCOBY that it not come in contact with metal. This includes jewelry such as rings, measuring cups, utensils, strainers, etc. Glass, plastic, and wood kitchen items are far safer for the Kombucha. Please keep this in mind when choosing items to use for working with your Kombucha. As a side note, metal is only harmful if it comes in contact with the SCOBY itself so if you wish, you can use a metal tea ball or spoon when brewing your tea. Just be sure to remove the metal prior to adding the SCOBY.

Tea Ball. If you are using loose tea, [tea balls](#) are quite handy for ensuring pieces of stray tea do not end up in your brew. Stray pieces of tea can get caught in the forming SCOBY and attract mold.

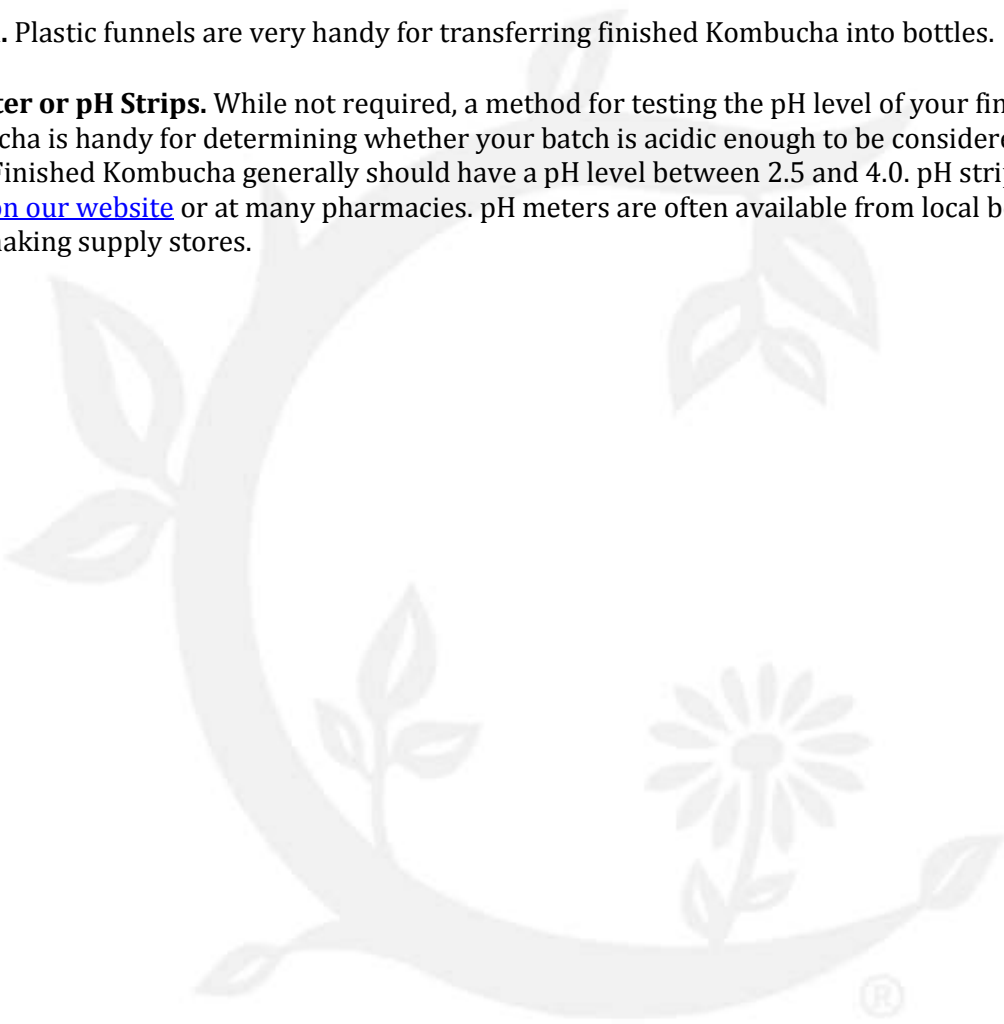
Strainer. Once your Kombucha is finished brewing and the SCOBY has been removed, it is helpful to strain the batch through a fine mesh strainer to catch any stringy yeast particles that may be floating in the brew. While not harmful if consumed, the texture tends to be undesirable. We recommend using a [plastic fine mesh strainer](#) for this task. Please note: if the finished Kombucha

sits in a storage container for a period of time, it may be useful to re-strain the Kombucha prior to consuming to catch any yeast particles or immature Scobys that may have formed during the period the Kombucha is stored.

Grolsch-style Glass Bottles. Flip-top style air-tight bottles make the perfect containers for storing your finished Kombucha tea. They are available [on our website](#) or from your local beer- and wine-making supply store. The bottles generally come in several sizes from a pint to a liter or more and often are available in several colors. Keep in mind that dark colors (brown, green, and blue) are most effective in ensuring light doesn't degrade the Kombucha. Avoid clear bottles when possible.

Funnel. Plastic funnels are very handy for transferring finished Kombucha into bottles.

pH Meter or pH Strips. While not required, a method for testing the pH level of your finished Kombucha is handy for determining whether your batch is acidic enough to be considered safe to drink. Finished Kombucha generally should have a pH level between 2.5 and 4.0. pH strips can be found [on our website](#) or at many pharmacies. pH meters are often available from local beer- and wine-making supply stores.



CHOOSING INGREDIENTS FOR MAKING KOMBUCHA

Making Kombucha tea requires five ingredients: Water, Tea, Sugar, Starter Tea or Vinegar, and a Kombucha Scoby (also known as a starter culture, mother, mushroom, etc.). The type of water, tea, and sugar used are important. Creating a safe batch of Kombucha requires maintaining a proper level of acid that allows the finished brew to reach a pH level between 2.5 and 4.0 prior to consumption. The acid serves a critical purpose by warding off mold and invading bacteria as well as providing a proper fermentation environment for the Scoby. Maintaining a proper level of acidity is dependent on the ingredients used and the health of the Scoby so while a number of water, tea, and sugar options exist, some provide a more healthy environment for the Scoby and a consistent pH level and therefore are more likely to yield a consistently safe brew.

WATER FOR KOMBUCHA

While tap water can be used, we recommend instead using filtered water free of as many contaminants as possible. Contaminants such as chlorine, chloramines, and fluoride can be detrimental to a batch of Kombucha and the health of the Scoby. Distilled water and reverse osmosis water can also be used to brew Kombucha. Do not use alkaline water (processed through a water ionizer) to brew Kombucha—it will kill the culture.

TEA FOR KOMBUCHA

Brewing Kombucha does require real tea (*camellia sinensis*) for both minerals and nitrogen. A number of varieties are available including black, green, white, pekoe, oolong, Darjeeling and more. We do recommend using organic tea whenever possible to avoid exposing the Scoby to pesticides. The type of tea you choose to use to brew Kombucha can affect the health of the Scoby as well as the taste of your finished brew.

Black Tea. Black tea consists of fully fermented tea leaves and has traditionally been used to brew Kombucha. Black tea is most nutritious for the Scoby and will promote the most ideal brewing conditions and maintain the most consistent pH level, all of which contribute favorably to the health of the Scoby. Black teas such as Ceylon, English Breakfast, and Darjeeling make a traditional amber-colored, bold-tasting Kombucha. The taste profile is most commonly described as apple-like or fruity, reminiscent of cider. Depending on the specific variety of tea used, it is also possible for Kombucha made with black tea to taste woody, earthy, or smoky. Please note: it is important to avoid black teas that contain oils such as Earl Gray tea, Chai tea, flavored Ceylon teas, etc. While flavored teas are popular among some Kombucha brewers, beware that the oils contained in such teas are not only hard on the Scoby but can also become rancid during the brewing process.

Oolong Tea. For a bit softer taste, try Oolong tea which consists of partially fermented tea leaves (and can be categorized as either a black and green tea). Oolong tea provides an amber-colored Kombucha with a somewhat fruity, somewhat grassy taste. Oolong tea is a favorite for Kombucha brewing here at Cultures for Health.

Green Teas. Green teas are commonly mixed with black teas for brewing Kombucha but can also be used alone. While not quite as ideal as black tea for fermenting Kombucha, Green Tea provides most of the necessary nutrients and can be used in combination with black or herbal teas. Green teas

tend to yield a lighter color, softer tasting Kombucha. Jasmine green tea makes a particularly tasty Kombucha.

Red Teas. Many Kombucha brewers enjoy using Red Roobios. We do recommend using it in combination with black tea (25% black tea).

White Teas. White teas tend to make a very flowery and delicate Kombucha. For the health of the Scoby, it is best to use white teas in combination with black, Oolong, or green teas.

Herbal Teas. Herbal teas do not contain the necessary nutrients to nourish the Scoby and should be used in combination with black tea (25% black tea) to prevent problems for the batch and the Scoby. While herbal tea alone will technically brew a batch of Kombucha, it is much more difficult to control the pH level of the brew and the Scoby will suffer nutritionally, both of which can result in an unsafe beverage. Beware herbal teas containing oils! They should not be used. (Examples include peppermint, chamomile, ginger, etc.)

Keep in mind that essential oils (also known as volatile oils) are often added to teas, are generally harmful to the Scoby, and can become rancid during the brewing process. We recommend avoiding all teas and herbs containing these oils when brewing Kombucha. In addition, teas that are smoked can be harmful to the Scoby. If an oil containing tea or a smoked tea is used, be sure to monitor the batch carefully for mold, test the pH level of the brew prior to consumption, and plan to discard the Scoby after a batch or two. (In addition we recommend not using any new baby Scobys resulting from these batches to make future batches.)

Caffeine. If caffeine is a concern, try using decaffeinated tea or use this method to bypass most of the caffeine: Prepare a cup of hot water along with your container of water for making Kombucha. Allow your tea to steep in the cup of hot water for 30 to 60 seconds prior to placing the tea in the container to make tea for your Kombucha. Discard the cup of water. Approximately 80% of the caffeine is released in that first minute of steeping.

SUGAR FOR KOMBUCHA

While it is always tempting to try to find ways not to use sugar in recipes, sugar is required for the fermentation process and cannot be bypassed or substituted. The sugar is necessary as the Scoby must consume the sugar to ferment the beverage. During fermentation, the Scoby breaks down the sugar and transforms it into acids, vitamins, minerals, enzymes, and carbon dioxide (which accounts for the fizzy texture Kombucha is known for). Do not be tempted to use less sugar than called for. Upsetting the ratios will disrupt the fermentation process and potentially result in a beverage that is unsafe to drink. Keep in mind that at the conclusion of the fermentation process, Kombucha contains only 1-2 grams of sugar or less per cup. Compare that to apple juice which contains 28 grams of sugar per cup. Longer Kombucha fermentations periods may result in even less sugar so there is truly no reason to skimp on the sugar and risk creating a dangerous brew. If you are particularly concerned about the sugar levels in your finished Kombucha, a hydrometer can be purchased from your local beer- and wine-making supply store or some people prefer to use a Accuvin residual sugar test kit.

Plain White Cane Sugar. Plain white sugar (the type you find at every conventional grocery store) is the easiest variety for the Scoby to digest during the fermentation process thereby creating a brew with the most consistent pH level. Unfortunately plain white sugar is not generally organic

and therefore typically contains pesticides and is produced from genetically modified crops neither of which is desirable.

Organic Evaporated Cane Crystals. The organic equivalent of plain white sugar, OECC is a bit less processed and therefore not quite as digestible for the SCOBY but still creates a brew with a relatively consistent pH level. Since it does not contain pesticides, GMOs, etc. it is very popular among Kombucha brewers and is the sugar of choice here at Cultures for Health both for production of the [Kombucha SCOBYs available on our website](#) as well as our own personal brewing projects.

Brown Sugar, Rapadura, Sucanat, Turbinado, Raw Sugar, Molasses. Sugars containing molasses can be used to brew Kombucha but are much more difficult for the SCOBY to digest and therefore may result in a less consistent fermentation process and resulting level of acidity. A poorly formed new SCOBY and excessive yeast sediment are common side effects. Please note: sugars containing molasses also yield a much less pleasant-tasting Kombucha. Overall we do not recommend using sugars containing molasses when brewing Kombucha but if you choose to use them, try boiling the sugared tea for 10 minutes prior to allowing the mixture to cool completely and using it to make Kombucha. The boiling process is purported to break down the sugar which allows the SCOBY to better utilize the sugar for fermentation. While not ideal, it may help a bit. If you use one of these sugar types, we recommend obtaining and using a reliable pH meter or pH testing strips to ensure the pH level of your batch of Kombucha is between 2.5 and 4.0 prior to consumption.

Honey. Pasteurized honey may be used. Do not use raw honey to brew Kombucha. Raw honey is antibacterial in nature and will disrupt the balance of yeast and bacteria in the SCOBY. Keep in mind that such disruption isn't always obvious and may result in an unsafe batch the first time or several batches later.

Agave. Agave can be used but it yields a sour tasting Kombucha and is problematic for the long-term health of the SCOBY. We do not recommend using agave.

Maple Syrup, Coconut Sugars, Rice Syrup, etc. While it may be possible to use these sugars when making Kombucha, we recommend exercising caution as good data does not currently exist as to their safety in either the short or long term. If you decide to experiment using one of these alternative sugars, we urge you watch your batch carefully for any signs of mold or break down of the SCOBY and to obtain and use a reliable pH meter or pH testing strips to ensure the pH level of your batch of Kombucha is between 2.5 and 4.0 prior to consumption.

DO NOT USE: Corn Syrup (or High Fructose Corn Syrup), Lactose, Sucralose, Aspartame, Acesulfame Potassium, Saccharin, Neotame, Xylitol, Lactose, Erythritol, or Stevia. None of these sweeteners can be utilized as food by the SCOBY and will be detrimental to the batch and harmful to the SCOBY, and will produce a beverage that is unsafe to consume.

STARTER TEA AND VINEGAR

Creating a safe batch of Kombucha is dependent upon maintaining a proper level of acid which wards off mold and invading bacteria as well as allowing the finished brew to reach a pH level between 2.5 and 4.0. While the type of tea and sugar used to brew the batch play important roles, the addition of an acidic liquid is also critical to the health of the SCOBY and the safety of the batch of Kombucha. The most desirable acidic liquid to use when brewing a batch of Kombucha is properly

brewed Kombucha tea from a previous batch. Ideally, approximately 1/8 of your batch of Kombucha should be made up of acidic Kombucha tea from a previous batch (e.g., ½ cup per quart or 2 cups per gallon). If you are new to brewing Kombucha or your supply is running low, there are two options. The first is to use a bottle of raw Kombucha tea (preferably unflavored) from your local natural food store. The second is to use vinegar, either white distilled vinegar or pasteurized apple cider vinegar. (Raw ACV introduces competing bacteria and is less likely to work properly.) Vinegar can make up all or part (used in combination with Kombucha tea) of the acidic liquid portion needed to brew a batch of Kombucha.

KOMBUCHA SCOBY

Also known as a starter culture, mother, mushroom, etc., the Kombucha Scoby is a collection of yeast and bacteria existing in a symbiotic relationship. A Scoby looks like a slimy pancake or the top of a mushroom and is a necessary component to brewing Kombucha.

Source. Be sure to obtain your Scoby from a reputable source. Friends and family are a great place to start if you have any current Kombucha brewers among your acquaintances. If not, the other options including [purchasing a Scoby](#) or growing one from a bottle of commercial raw Kombucha. [Click here for more information on obtaining or growing a Scoby.](#)

Size. The size of the Scoby is not particularly important. A small Scoby can brew a relatively large batch of Kombucha.

Holes in the Scoby. Do not be concerned with holes in the Scoby (which are common when the baby Scoby fuses to the mother Scoby during the fermentation process and must be torn apart). Also, using pieces of a larger Scoby is acceptable as long as metal wasn't used to remove the pieces from the larger Scoby.

Coloring. The Scoby should be primarily off-white in color or sometimes more tan. Blobs of brown or stringy brown particles clinging to the Scoby are normal byproducts of the yeast. Do not use a Scoby that has signs of mold (black, orange, green, or very white spots) or a Scoby that has turned black (a sign the culture has died).

STRAYING FROM THE RECIPE

After you have been making Kombucha for a while you may be tempted to stray from the guidelines presented here. Maybe you want to try making an herbal tea Kombucha or brewing using molasses? If you choose to do so, we urge you to use good safety practices including:

- Watching your batch very carefully for signs of mold or changes to the Scoby.
- Not reusing mother Scobys or new baby Scobys from experimental batches.
- Obtaining and using a reliable pH meter or pH testing strips to ensure that your brew has a pH level between 2.5 and 4.0 prior to consumption.
- Using good judgment and never consuming any Kombucha that looks, smells, or tastes unpleasant.

SAFETY FIRST!

Please note: these ingredient recommendations are presented as suggestions only and do not substitute for using good judgment. No matter what ingredients or ratios you choose to use, regardless of whether mold is present or not and in spite of the pH level of the finished brew, we implore you to always use your best judgment when brewing and consuming Kombucha and to never consume any Kombucha that looks, tastes, or smells unpleasant.



HOW TO MAKE KOMBUCHA TEA

PREPARE THE EQUIPMENT AND INGREDIENTS

To make Kombucha tea you will first want to gather your equipment and ingredients and prepare the Kombucha mixture for fermentation.

Equipment. [Click here](#) for more information on choosing the best brewing container, cover system, utensils and other supplies

- One glass jar (quart, half-gallon, or gallon sized)
- A plastic or wood stirring utensil (never use metal in contact with a Kombucha Scoby!)
- A breathable cover for the jar such as a tight-weave dish towel or paper coffee filter
- A rubber band to secure the cover

Ingredients. [Click here](#) for more information on choosing the best tea, sugar, and water source for making Kombucha

- One [Kombucha Scoby](#)*
- Tea ([click here](#) for more information)
- Sugar ([click here](#) for more information)
- Starter tea from a previous batch of Kombucha or Vinegar (distilled white vinegar or pasteurized apple cider vinegar)
- Filtered water (preferably free of chlorine, chloramines, and fluoride)

*If you are working with a dehydrated Kombucha Scoby, please [click here](#) for instructions on activating the Scoby through rehydration.

Container Size	Tea Amount	Sugar Amount	Water Amount	Starter Tea Amount
One quart	1 ½ t. loose tea or 2 tea bags	¼ c.	2 ½ c. (approx.)	½ c.
Half-gallon	1 T. loose tea or 4 tea bags	½ c.	6 ½ c. (approx.)	1 c.
Gallon	2 T. loose tea or 8 tea bags	1 c.	13 c. (approx.)	2 c.

A note about hygiene. When working with Kombucha, it is important not to introduce competing bacteria to the brew. Be sure to wash and rinse your hands well prior to working with the tea mixture or the Scoby. Also be sure to thoroughly clean and rinse the container and all utensils that will come in contact with the Scoby. Beware soap and food residue the dishwasher may have missed. When in doubt, give everything an extra rinse. The brewing vessel can be cleaned with regular soap and hot water (rinse very well) or with vinegar. Never use bleach on any item that will come in contact with your brew.

THE BASIC PROCESS FOR MAKING KOMBUCHA

- Place hot water and sugar together in a jar. Mix until the sugar dissolves. The water should be hot enough to steep the tea but does not have to be boiling.

- Place the tea in the sugar water and allow the tea to steep. Allow the mixture to cool to room temperature. (This will likely take most of the day if you are making a gallon-size jar.) You can remove the tea bags after 10 minutes or wait until the water is cool.
- Place the Kombucha Scoby and starter tea or vinegar in the jar of fresh sugared tea. Cover the jar tightly (keep the fruit flies out!) but allow the mixture to breathe. A towel or paper coffee filter along with a thick rubber band work best for this. Do not use an air tight lid!

FERMENTING THE KOMBUCHA

Choose a safe spot. An ideal culturing spot should be relatively warm but not excessively so. Temperatures between 70° and 80° are ideal (see below). The best fermenting spot for Kombucha is out of direct sunlight. Indirect light or darkness is neither favorable nor problematic. Be sure the spot has reasonably good airflow as access to oxygen benefits the fermentation process. In addition, be sure the Kombucha is not fermenting near any other cultured foods such as kefir, yogurt, sourdough, sauerkraut, etc. Cross-contamination of stray yeasts and bacteria can be problematic for the Kombucha Scoby and any other fermented foods you are working with.

Do not disturb. It is important to allow the Kombucha to ferment undisturbed. Moving the jar or otherwise disturbing the contents will not ruin the batch but does make it more difficult to observe the most common signs the process is proceeding normally.

Allow the Kombucha to ferment. Now comes the hard part: waiting for your brew to ferment. But how long does it take? Fermentation periods are determined primarily by three factors:

Ambient temperature. Ambient temperatures that are too hot or too cold can disrupt the process: too cold and the process slows down, too hot and fermentation proceeds too quickly and results in a less desirable flavor pattern. We recommend choosing a culturing location with an ambient temperature between 70° and 80° for ideal results.

Access to oxygen. Air flow assists the fermentation process so culturing in a container with a breathable cover will speed the fermentation process, while using a solid lid will slow it down.

Liquid Surface Area. The size of the surface area of liquid exposed to the air will influence the rate at which your Kombucha brews. Kombucha brewed in a bowl with a 9" diameter opening will brew significantly faster than Kombucha brewed in a jar with a 3" diameter opening.

Remember: Faster fermentation isn't necessarily better. Kombucha can turn to a strong vinegar taste in a relatively short period of time if the temperature is too warm or the liquid surface area is too large. Slow and steady fermentation results in a more desirable taste profile.

Assuming ideal temperature, access to sufficient oxygen, reasonable liquid surface area, etc., your brew can officially be considered Kombucha after it has been fermenting for 5-7 days. For the first few batches, we recommend using a straw to start tasting the Kombucha every other day or so starting on day 7. This allows you to determine at what point to halt the fermentation process based on your own personal taste preferences. Some people like their Kombucha best after it has been fermenting only a week. Others prefer 2, 3, or even 4 weeks or more of fermentation. Keep in mind

that shorter fermentation periods will result in a sweeter brew. Longer periods will result in a more vinegar-like taste. Very long fermentation periods (over 30 days) tend to result in a strong vinegar-like taste. The longer the brew ferments, the less sugar will remain, so if sugar consumption is a concern we recommend brewing for 3-4 weeks prior to consumption. Please note: at some point your Scoby will run out of sugar and tea to effectively consume and will start to suffer nutritionally. For that reason, we do not recommend over-brewing your Kombucha. Assuming ideal conditions, over-brewing generally starts to occur sometime between 4 and 6 weeks.

HOW DO I KNOW IF I'VE MADE KOMBUCHA?

Assuming ideal fermenting conditions (see above), it is common to see signs of fermentation within a few days. These signs include:

Formation of a new “baby” Scoby. This process begins as a layer of film developing on the surface of the liquid. Generally the layer will start off clear (and is often missed) but over the period of a few days or a week will become hazy and then less and less translucent, more white, and slowly thicker until it resembles the Scoby you used to culture the batch. Please note: if the container is disturbed or vibrates during the early stages of the process, the newly developing Scoby will often detach from the surface of the liquid and fall, resulting in a roaming gel-like mass in the liquid. This mass is not harmful and is simply an immature Scoby. This will also not harm the batch in any way—the brew will still continue to ferment on schedule and within a few days the process of a new Scoby forming on the surface of the liquid will begin again. Keep in mind that if the new Scoby falls at this early stage of development, it could delay the number of days it takes to observe a new Scoby forming (often considered the best sign a batch is culturing normally). Every once in a while, a new Scoby does not form. This in and of itself does not indicate a failed batch. In a case where that happens, refer to the taste and pH level of the brew for further indication of whether the process proceeded normally.

An increasingly acidic (vinegar) flavor. As the Kombucha ferments, the Scoby will consume the sugar and tea and produce acids, vitamins, minerals, enzymes, and carbon dioxide. As this process proceeds, the brew will taste less sweet and increasingly acidic (a more vinegar-like taste).

Lower pH. The increasing level of acidity can also be seen by a lowering of the pH. While not required, a pH meter or pH testing strips can be used to determine the pH of your Kombucha.

The best signs your Kombucha is ready include that at least 7 days have passed (assuming ideal fermenting conditions), that it has become more acidic than the mixture you originally began with, and the taste is one that you find pleasing. While not required, it is also possible to test the pH level of your brew using a pH meter or testing strips. Kombucha should reach a pH level of between 2.5 and 4.0 prior to consumption.

NORMAL VARIATIONS VS. SIGNS OF PROBLEMS

Normal Variations. Each batch of Kombucha is unique and therefore may not proceed exactly as the previous batch. Some common variations include:

- The SCOBY may float, sink to the bottom, or hover in the middle of the brew. The SCOBY may lie vertically or horizontally. None of these positions indicate any sort of problem and are likely attributable to atmospheric conditions including humidity level.
- You may see a brown stringy substance floating in the container, brown blobs clinging to the SCOBY or dark sediment forming in the bottom of the container. All of these are byproducts of the yeast culturing the liquid and are not a sign of a problem.
- If the jar is disturbed or vibrates, or sometimes for unknown reasons, the new forming baby SCOBY may detach from the surface area and sink to the bottom or otherwise float in the liquid. This is not a problem and does not impede the process (see above).
- Depending on the position of the SCOBY used to ferment the batch, sometimes the original SCOBY will attach and fuse to the newly developing SCOBY. Once the batch is complete you can separate them by tearing them apart (do not use metal such as a knife or scissors) or use them as a single culture to brew your next batch.

Signs of Potential Problems. While generally rare, it is possible for problems to develop including mold, infestation by pests, or simply failure to culture properly.

Mold. If appropriate varieties of water, tea, and sugar are used, the acidic component (starter tea or vinegar) is added, the acidic nature of the brew makes it very uncommon for mold to develop. In fact the most common cause of mold is forgetting an ingredient or using improper ingredient ratios that alter the acidic level of the brew. However unlikely, mold can and does occasionally develop and can generally be seen by the formation of white, green, orange, red, or black spots on the SCOBY. Other potential causes of mold include:

- Contamination from soap or food residue in the jar or on the utensils used to prepare the mixture.
- Mold spores on the tea used to brew the Kombucha.
- Transient yeasts and bacteria in the air or poor hygiene practices when preparing the brew.
- Allowing your Kombucha to ferment too close to a garbage can that can be a source of transient bacteria.
- Allowing your Kombucha to ferment too close to other fermented foods (yogurt, sourdough, kefir, sauerkraut, etc.) or rising bread made with commercial baking yeast.
- Mold spores in the air from a humid environment such as a kitchen or bathroom or in the air ducts (high humidity levels in general can make it more difficult to prevent mold).

If mold does develop, immediately toss the entire batch including the SCOBY. Do not try to salvage a moldy batch or a moldy SCOBY. Doing so is dangerous to your health. Obtain a new SCOBY, clean the jar thoroughly and try again another day. If mold has been a problem in the past, try moving the jar to another spot away from any possible contaminants and gently pouring a teaspoon or two of either Kombucha from a previous batch or pasteurized apple cider vinegar over the newly developing SCOBY every day to discourage mold development.

Pests. Fermenting Kombucha is very attractive to ants and fruit flies, which is why we recommend using a tight-weave cover and securing the cover with a tight rubber band to

keep the invaders out. If you find worms (maggots) have infested your SCOBY, this is a sign that fruit flies or house flies have invaded and laid their eggs. If this happens, immediately toss the entire batch including the SCOBY. Do not try to salvage an infested batch or an infested SCOBY. Doing so is dangerous to your health. Obtain a new SCOBY, clean the jar thoroughly and try again another day.

Black SCOBY. A black SCOBY (or black parts of the SCOBY) is a sign the SCOBY has died. While this doesn't happen too often, any batch brewed with that SCOBY should be tossed and a new SCOBY obtained prior to making the next batch.

Taste of the Kombucha doesn't change. If you find that your Kombucha does not seem to be fermenting, first determine whether the place it has been sitting is too cool. (Consider temperature shifts at night.) Often the problem can be resolved simply by moving the container to a warmer location. Also consider whether the place it has been sitting has adequate airflow and adjust the location accordingly.

pH Level. While most Kombucha brewers do not test the pH level of each individual batch, we find pH testing to be useful when experimenting with non-recommended ingredients or ingredient ratios or when a problem is otherwise suspected. If a batch does not seem to be showing signs of fermentation and you have verified that temperature and airflow are not issues, it is worth testing the pH level of the batch to determine if it has become more acidic and if it is safe to consume. Kombucha should reach a pH level between 2.5 and 4.0 prior to consumption. While it is quite rare for a batch to fail, if it happens, just throw it out and start over.

Safety First! Please note: all of this information is presented as suggestions only and does not substitute for using good judgment. No matter what ingredients or ratios you choose to use, regardless of whether visible mold is present or not, and regardless of the pH level of the finished brew, we implore you to always use your best judgment when brewing and consuming Kombucha and to never consume any Kombucha that looks, tastes or smells unpleasant.

HARVESTING YOUR KOMBUCHA

Congratulations! You've brewed your first batch of Kombucha. Now comes the fun part: harvesting and enjoying your brew.

Removing the SCOBYs (both of them). Prior to harvesting your batch, you will need to make a new batch of sugar tea with some starter Kombucha tea so you will have a place to put both the original SCOBY you started with as well as the baby SCOBY that formed during the fermentation process. You can use both SCOBYs to brew a new single batch or you can separate them into two containers. When removing the SCOBYs be sure to use clean hands without metal jewelry. If the SCOBYs have fused together they can be torn apart if desired.

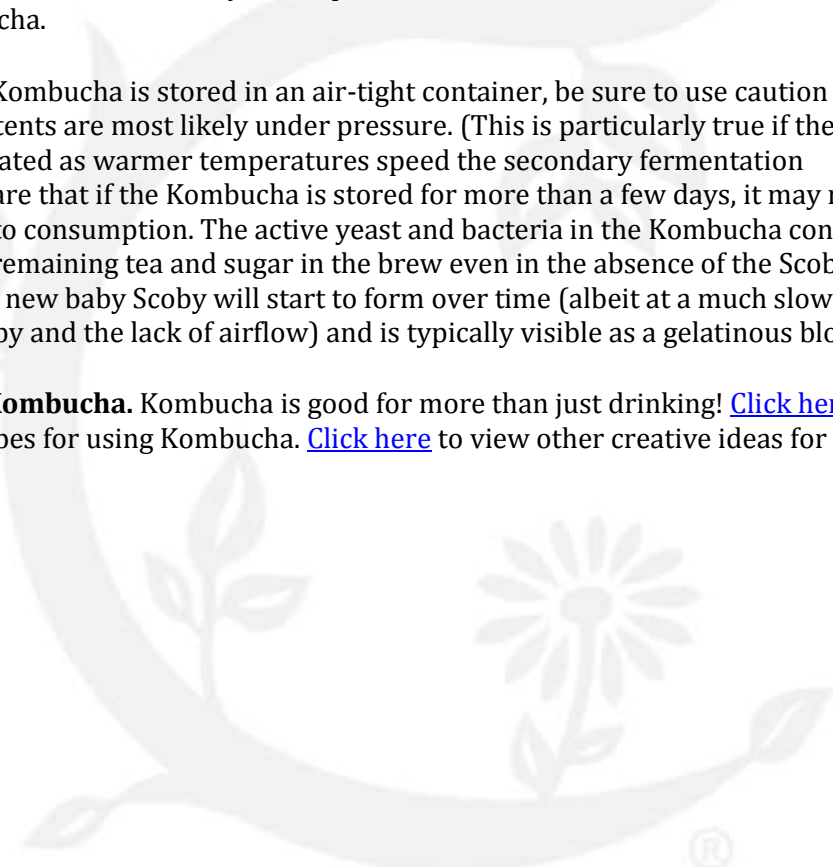
Straining. Prior to consumption, we do recommend straining the Kombucha through a fine-mesh plastic strainer. The strainer will catch the stringy brown yeast particles and any immature SCOBYs that may have formed (often look like blobs of gel). While neither of these things is problematic if consumed, the texture isn't particularly desirable either. Once strained, the Kombucha can be consumed.

Flavoring. If desired, Kombucha tea can be flavored using fruit, fruit juice, herbs, and more. Be sure to set aside some unflavored Kombucha to use as starter tea for your next batch prior to adding flavorings. [Click here](#) for more information on flavoring your Kombucha.

Bottling. If desired, Kombucha can be bottled for consumption at a later date. If you use air-tight bottles, bottling Kombucha can serve a secondary purpose beyond storage as the active yeast and bacteria will continue to consume the remaining tea and sugar in the brew but at a much slower rate. (This process continues even though the SCOBY has been removed.) The fermentation process produces carbon dioxide that will build up under the pressure of the airtight bottle resulting in the fizzy texture Kombucha is known for. This process can be further enhanced by adding juice or fruit for a secondary fermentation period. The added sugar from the juice increases the amount of food available to the active yeast and bacteria thereby increasing the amount of carbon dioxide the secondary fermentation process will create. Please be sure to use extreme caution when opening the bottle as the contents are most likely under pressure. [Click here](#) for additional information on bottling your Kombucha.

Storage Tips. If the Kombucha is stored in an air-tight container, be sure to use caution when opening it as the contents are most likely under pressure. (This is particularly true if the Kombucha has not been refrigerated as warmer temperatures speed the secondary fermentation process.) Also be aware that if the Kombucha is stored for more than a few days, it may need to be strained again prior to consumption. The active yeast and bacteria in the Kombucha continue to work to process the remaining tea and sugar in the brew even in the absence of the SCOBY. This process means that a new baby SCOBY will start to form over time (albeit at a much slower rate due to the lack of the SCOBY and the lack of airflow) and is typically visible as a gelatinous blob.

More Ways to Use Kombucha. Kombucha is good for more than just drinking! [Click here](#) to view our collection of recipes for using Kombucha. [Click here](#) to view other creative ideas for using Kombucha.



FLAVORING AND BOTTLING KOMBUCHA TEA

One of the greatest benefits of making your own Kombucha at home is the ability to influence the flavor of the finished product and find new blends for your family. Kombucha flavor can be influenced a number of ways including the tea used to initially brew the Kombucha, the length of the fermentation period, whether or not you choose to add flavorings, and whether you choose to employ a second fermentation period.

CHOOSING THE TEA

The type of tea used to brew Kombucha is one of the most important ways to influence how the finished Kombucha will taste. Please remember, not all teas are appropriate for use when making Kombucha. [Click here](#) to read more about which teas are best to use for the health of the Scoby.

- Black tea tends to make a bolder-tasting, amber-colored Kombucha. Kombucha made with black tea is often described as having a fruity flavor reminiscent of apple cider but can vary greatly. We recommend experimenting with English Breakfast, Ceylon, Darjeeling, etc. as different teas and combinations of teas can create undertones that are woody, earthy, and smoky.
- Oolong tea is our favorite variety here at Cultures for Health. Oolong provides the amber color of a black tea but the partial fermentation of the tea leaves balances the flavor creating a more even-toned flavor that is somewhat fruity, somewhat grassy—essentially a flavor you would expect to find in between a black tea and a green tea. Oolong makes a very nice base flavor upon which to add flavorings after the primary fermentation process is complete.
- Green teas generally offer a lighter color and a grassy taste profile. We recommend trying Jasmine green tea which makes a particularly tasty Kombucha.
- White teas make a very delicate and flowery-tasting Kombucha.
- Herbal teas can be added for flavor but must be used in combination with black or green teas. Remember, herbal teas with oils must be avoided ([click here for more information](#)). Combining strawberry herbal tea with Oolong tea makes a particularly tasty brew.

FERMENTATION PERIOD

As the Kombucha ferments, the Scoby consumes the tea and sugar producing vitamins, minerals, enzymes, carbon dioxide, etc. The longer the fermentation process is allowed to proceed the less sweet and more acidic the resulting liquid will be. This process can be used to one's advantage by strategically halting fermentation when the right balance has been reached between the sweetness and vinegar flavors for your particular taste preferences. While we recommend allowing the Kombucha to ferment for at least seven days given ideal conditions ([click here for more information](#)), once that initial week has passed, it is a matter of personal preference when the process is halted. For example, many people prefer to stop fermentation between 7 and 10 days which yields a more sweet Kombucha due to higher sugar content. Fermentation periods of 3-5 weeks will generally yield a much more vinegar-like flavor profile (and significantly lower sugar content). A quick tip: After 7 days, you can start tasting your brewing Kombucha using a straw. This

way you can keep an eye on how the flavor is progressing and halt the process when you find the flavor most pleasing.

ADDING FLAVORS

Once you've made your batch of Kombucha, the initial fermentation period is complete and the SCOBY can be removed. You can consume the Kombucha as is or choose to add additional flavorings. Common options for additional flavorings include fruits, juices, herbs, and spices. Flavor extracts such as vanilla, almond, coconut, etc. can also be used. Flavoring agents can be added to the Kombucha just prior to drinking, or can be added to the Kombucha and then the mixture can be stored in an air-tight bottle for a second round of fermentation (see below). As a general rule of thumb:

- If flavoring with fresh, frozen, or dried fruit, we recommend starting with 10-30% fruit and 70-90% Kombucha. Keep in mind that dried fruit often yields less flavor than fresh or frozen fruit.
- If flavoring with juice, we recommend starting with 10-20% juice and 80-90% Kombucha.
- If flavoring with herbs, the variety and strength of herbs varies so greatly we recommend just experimenting to come up with the best ratios and combinations for your taste preferences.
- For flavor extracts such as almond extract or vanilla extract, start with $\frac{1}{4}$ teaspoon extract per cup of Kombucha and then adjust to taste.

FLAVORING IDEAS

Blueberries and Raspberries
Blueberries and Cinnamon
Blueberries and Fresh or Candied Ginger
Strawberries and Fresh or Candied Ginger
Strawberries and Raspberries
Cherries and Almond Extract
Fresh Peaches
Fresh Pears
Pears and Almond Extract
Goji Berries
Pineapple

Cranberry Juice
Pear Juice
Pomegranate-Blueberry Juice
Apple Juice and Cinnamon
Grape Juice
Lemon Juice and Fresh or Candied Ginger
Lime Juice and Fresh or Candied Ginger
Pineapple Juice, Coconut Water, and Coconut Extract

Vanilla Beans (split open) or Vanilla Extract
Pumpkin Pie Spice

SECOND FERMENTATION AND BOTTLING

Once the primary fermentation period is complete and the SCOBY has been removed, if you wish to add flavorings (juice, fruit, etc.) there are advantages to taking the time to allow the now-flavored Kombucha a second round of fermentation. A second fermentation period allows the flavors to meld and achieve a deeper and more complex flavor profile. Further, if bottled in an airtight container (see below), the live yeast and bacteria in the Kombucha will continue to consume the tea and sugar that remained after the primary fermentation process was completed and the SCOBY was removed, along with any sugar from juice or fruit added for flavor. A by-product of fermentation is that the sugar is turned into carbon dioxide giving the Kombucha the fizzy texture it is often known for.

Instructions for a Second Fermentation Period:

- Remove the SCOBY from the finished Kombucha
- Add the desired flavoring and mix to combine
- Bottle the flavored Kombucha in air-tight bottles (see below)
- Allow the Kombucha to remain bottled for 2-14 days at room temperature.
- Once the secondary fermentation process is complete, the Kombucha can be strained of the fruit or herbs if desired. The liquid can then be rebottled and stored on the counter or in the fridge.
- The Kombucha may need to be strained again prior to consumption as the active yeast and bacteria in the Kombucha will continue to ferment the beverage (even in the fridge) at a slower rate and can produce small immature SCOBYs (looks like small blobs of gel) or stringy brown yeast particles. While neither is harmful if consumed, both have an unpleasant texture.

Choosing bottles for Kombucha. We recommend choosing glass bottles for storing Kombucha. Technically stainless steel can be used but we find that glass is the least problematic material. We do not recommend using plastic. Plastic can be scratched or damaged and can harbor bacteria that can contaminate the Kombucha. Plastic may also react to the acidic nature of the Kombucha. While essentially any glass container with a lid can be used to store Kombucha, to obtain the best level of carbon dioxide, which gives Kombucha its characteristic fizzy texture, it is important to bottle Kombucha in truly airtight bottles. For example, canning jars make wonderful storage vessels for finished Kombucha but they are not truly airtight and carbon dioxide will leak from them resulting in flat-tasting Kombucha. Better options include [Grolsch-style \(flip-top\) bottles](#) or old wine bottles fitted with new corks. Both adequately contain the building gas and keep the Kombucha better carbonated.

Use caution when opening the bottle. Creation of carbon dioxide during the secondary fermentation period means the contents of the bottle will be under pressure and caution should be used when opening the bottle. We recommend covering the bottle with a cloth to catch any spraying liquid and to open the bottle slowly while applying downward pressure.

Alcohol content. A quick word of warning about alcohol content in flavored Kombucha. The manner in which most people flavor and store their Kombucha for a secondary fermentation period

will result in only a very minimal amount of alcohol (generally purported to be less than .5%). However, in cases where a large proportion of a high-sugar flavoring is added to the Kombucha, a very long secondary fermentation period is utilized, or the flavored Kombucha is stored for an extensive period of time prior to consumption, it is possible to build a higher level of alcohol content. Consequently, we urge you to always use good judgment when consuming flavored Kombucha.



SETTING UP A CONTINUOUS BREWING SYSTEM

Traditionally, Kombucha is brewed using a continuous brewing system. Continuous brew systems are easy to set up and have a number of benefits.

- A continuous brew system is less maintenance as it only needs to be cleaned periodically. Adding new sugared tea to an existing jar already containing the starter tea and Scoby is far easier than starting with a brand new container.
- A continuous brew system allows for the greatest chance of a successful batch. Maintaining the ecosystem created during the fermentation process provides the best defense against the development of mold and invasion by transient yeasts and bacteria.
- A continuous brew system provides the healthiest environment for the Scoby. Rather than disturbing the ecological environment through moving to new containers and regular cleaning cycles, the continuous brew allows the yeast and bacteria to develop relatively undisturbed with a consistent supply of new food.
- A continuous brew system provides a more consistent supply of Kombucha for your family. A specific amount can simply be harvested every few days, once a week, etc.
- A continuous brew system allows for a balance between the benefits of short and long fermentation periods. Shorter fermentation periods (1-2 weeks) will generally yield a more sweet and pleasant-tasting Kombucha. Longer fermentation periods yield Kombucha with a much stronger vinegar-like taste but also a wider array of beneficial bacteria and enzymes. A continuous brew system allows you to reap the benefits of both.

HOW TO SET UP THE BREWING SYSTEM

Choosing Equipment. The only difference between making Kombucha using a standard system and a continuous brewing system is the container used for brewing. [Click here](#) for a list of other equipment used when brewing Kombucha.

Size. A continuous brew container should hold between 1 and 5 gallons.

Material. Kombucha should be brewed in glass or porcelain. Ceramic, plastic, crystal and metal are problematic and generally should not be used. [Click here](#) for more information on choosing the best material for your brewing vessel.

Spigot. A continuous brew container should have a spigot located near the bottom of the container so Kombucha can be drawn off without disturbing the contents at the top of the container. Do not use a container containing a metal spigot! Metal in contact with the Scoby is detrimental. Be sure to test the container and spigot thoroughly for leaks prior to filling it with the Kombucha mixture.

Cover. A cover serves two purposes. It should allow the gases created during the fermentation process to escape while keeping out transient yeast and bacteria as well as pests such as fruit flies and ants. If the container has its own cover, determine that the lid is not airtight so the gases can escape properly. If the container does not have a built-in cover, use a tight-weave towel, paper towel, etc. to cover the top. We also recommend securing the cover with a tight rubber band to prevent infestation by fruit flies and ants.

Cleaning. Be sure to clean everything thoroughly prior to setting up the brew system. While soap can be used, rinse very thoroughly multiple times to ensure that no traces of soap or food particles remain. Vinegar can also be used to clean the container and is much safer than soap as remaining traces will not harm the brewing process.

Prepare the Kombucha Mixture. Prepare the sugared tea mixture just as you would when creating a typical batch of Kombucha. ([Click here](#) for ingredients, ratios, and instructions.) Be sure to adhere to proper ratios even when making a larger batch. Once the sugared tea is completely cooled and the starter tea or vinegar has been added, pour the mixture into the continuous brewing system and add the Scoby. Do not overfill the container. Only 80% of the vessel should be filled with liquid to allow space for the mother Scoby, development of the new Scoby, circulation of gases, etc. Please note: normal-sized Scobys can be used to brew these larger batches. There is no need to use a larger than normal Scoby for this project.

Ferment the Kombucha. Allow the Kombucha to ferment for the desired period of time ([click here](#) for more information on Kombucha fermentation periods).

Harvesting the Kombucha. Once the taste profile is desirable, remove the portion of the Kombucha you wish to consume for the week and bottle the Kombucha. Be sure to leave at least 20% of the Kombucha in the vessel to act as starter tea for the next batch.

Feeding the Brewing System. Prepare new sugared tea using the normal ratios. Allow the sugared tea to cool thoroughly then slowly pour the solution into the top of the brew system. No need to mix. This feeds the system for the week. Be sure to fill the container only to 80% capacity.

Timing Harvesting and Feeding. If desired, harvesting and feeding can be done every 3-14 days, we suggest weekly as that is the method used by most people. If you wish to draw off Kombucha to drink daily but only feed the mixture weekly, be aware that Kombucha drawn off at the beginning of the week is likely to have a higher sugar content than Kombucha drawn off later in the week (further away from when sugared tea was last added).

Controlling Sugar Content. It is a bit more challenging to control the sugar content of the Kombucha when using a continuous brew system. If low sugar content is an important factor for you, be sure to draw off all the Kombucha you will require first before adding the fresh sugared tea. We also recommend allowing the new sugared tea an adequate fermentation period prior to the next draw off. For example, if you require Kombucha with a low sugar content, we would recommend drawing off 2-3 week's worth of Kombucha from the brew system prior to adding the new sugared tea. We would then recommend waiting 2-3 weeks before the next draw off to ensure the batch has fermented sufficiently.

Ongoing Cleaning of the Brewing Vessel and Spigot. We recommend cleaning the vessel and spigot only when warranted. For example, if the spigot becomes clogged with yeast particles or if too much yeast debris builds up in the bottom of the container. To clean the system, remove the Kombucha and Scoby and set them aside in a safe container. Clean the system thoroughly using vinegar if possible. (Soap can be used but must be rinsed very thoroughly several times as soap residue will be detrimental.) Once the system is clean, the Kombucha and Scoby can be added back to the vessel, sugared tea can be added, and the process can resume.

The Large Scoby. One side effect of the continuous brewing system is the development of very large Scobys as the Scoby will generally cover the entire surface area of the liquid. The primary issue with large Scobys is that after some time they grow very thick and take up valuable space in the container. Besides being a fun thing to show off and possibly making a great prop for Halloween, very large Scobys can be cut up using a non-metal utensil and pieces distributed to friends for making their own Kombucha; or [check out our list of ideas for using extra Scobys](#).



TAKING A BREAK FROM MAKING KOMBUCHA TEA

As a live culture consisting of active yeasts and bacteria, a Kombucha Scoby does best if it is allowed to sit on the counter culturing one batch of sugared tea after another. However, life can interfere at times and if you are facing the possibility of needing to take a break from making Kombucha, here are some guidelines for how to take a break without damaging the Scoby.

SHORT TERM BREAKS (LESS THAN 6 WEEKS)

While many people brew their Kombucha for only 1-4 weeks (depending on personal taste preferences), it is possible to allow a batch of Kombucha to brew for up to 6 weeks assuming the Kombucha is not brewing someplace particularly warm. So for breaks of up to 6 weeks, we recommend simply allowing the Kombucha to brew in a batch of fresh sugared tea and starter tea for those few extra weeks. The resulting brew will have a very strong vinegar taste and can be discarded or used in place of vinegar to make salad dressing, marinade, etc.

LONG TERM BREAKS (MORE THAN 6 WEEKS)

Longer-term breaks tend to be a bit more difficult to manage safely but there are several options available.

Create a holding jar and feed the Scoby every 4-6 weeks. Kombucha Scobys can be placed in a jar of fresh sugared tea and starter tea (in the same ratios as would be used to make a normal batch) and allowed to sit in a relatively cool spot. Every 4-6 weeks, discard some of the liquid and add either some fresh sugared tea (up to 80% of the jar) or just some sugar (1/4 cup per quart of liquid). Stir to combine. (no metal utensils!) The fresh sugared tea is preferable as it provides all the nutrients the Scoby needs to survive and thrive during the break. If that isn't an option, adding just sugar will generally keep the Scoby going until you can get back to it. Please note: if adding just sugar, you'll likely only be able to do so for 2-3 cycles before the Scoby begins to suffer. Also note that over time, liquid will evaporate from the jar and will need to be replaced.

Create a holding jar for the Scoby and place it in the refrigerator. While this is not ideal, a Kombucha Scoby can be placed in a fresh batch of sugared tea and starter tea in the refrigerator. The cold will greatly slow the fermentation process and place the Scoby in a state of hibernation. While on the surface this seems like an ideal solution, keep in mind that placing a live culture in a state of chilled hibernation and bringing it back out is not a guaranteed process and may cause some damage to the Scoby. However, most of the time it does work okay. A single Scoby should never be placed in a chilled hibernated state more than once. Please note: **DO NOT FREEZE** Kombucha Scobys.

Dehydrate the Scobys. The final option is to dehydrate a few Scobys to use in the future. Scobys can be dehydrated by placing them on a sheet of unbleached parchment paper and allowing them to dry in a warm spot (around 80° to 90°) until they are the consistency of jerky. Beware of fruit flies and other pests when leaving Scobys out to dry. Please note: we suggest drying several Scobys as the process isn't normally very precise and there is a failure rate. Having multiple Scobys improves the odds you'll be successful rehydrating at least one Scoby when you are ready to start making Kombucha again. Once the Scobys are dehydrated, place them in sealable plastic bags (one per bag)

and store them in the refrigerator (not the freezer). Dehydrated Scobys will generally survive in the fridge for at least 3 months. [Click here for instructions for how to rehydrate the Scoby](#) once you are ready to start making Kombucha again.



USES FOR EXTRA KOMBUCHA SCOBYS

Because a new SCOBY is created with almost every new batch, it is easy to quickly be overrun with SCOBYs. If you have friends or family members who would benefit from being able to make their own Kombucha, the best place for an extra SCOBY is in a loving home (Be sure to pass on a copy of this eBook so they can take good care of the SCOBY.) However, at some point you are likely to run out of homes for the SCOBYs to go to so then what? Here are a few ideas for using extra SCOBYs.

Add to a Smoothie. Add a piece of SCOBY to your morning smoothie.

Kombucha Jerky. Kombucha SCOBYs can be laid on a piece of unbleached parchment paper and dried at 80° to 90° until they reach the consistency of jerky. (Be watchful for fruit flies and pests that are attracted to drying SCOBYs.) Kombucha SCOBYs can then be consumed as a treat or cut up on a salad, in trail mix, etc.

Pet Treats. Kombucha SCOBYs can be fed to pets either fresh or using the same process for making Kombucha Jerky to make a dried pet treat.

Substitute for Raw Fish in Sushi. With a texture similar to squid, Kombucha SCOBYs can be cut up and eaten along with the nori, rice, vegetables, etc.

Face Mask. Kombucha SCOBYs can be used as a face mask either whole or ground up.

As a Bandage. Some customers report using SCOBYs as a live bandage.

Chicken Food. Many chicken owners find their chickens really appreciate a fresh SCOBY as a treat.

Compost. SCOBYs can be added whole to the compost pile or ground up and added directly to the soil beneath plants.

CREATIVE WAYS TO USE KOMBUCHA TEA

Kombucha is surprisingly versatile! It can be bottled or used in salad dressing, marinade, frozen treats, mixed drinks, and many more types of recipes.

Bottled Drink. The most popular way to use Kombucha tea is as a flavored bottled beverage. The options for flavoring are practically endless as fruit, juice, herbs, and spices can all be used. Click [here](#) for more information on [flavoring and bottling Kombucha tea](#).

Salad Dressing and Marinade Recipes. Kombucha tea can be used in place of vinegar in your favorite salad dressing or marinade recipe. For these types of recipes, it is best to use well-fermented Kombucha that has taken on a strong vinegar-like flavor. If your Kombucha is on the sweeter side, adjust any sweeteners in the recipe accordingly.

Frozen Treats. Kombucha can be blended with fruit or juice and frozen to make popsicles or granitas.

Acidic Ingredient in Mixed Drinks. Many cocktail recipes call for an acidic ingredient and Kombucha can often be used as a substitute.

As a Substitute for Apple Cider Vinegar. Kombucha can be substituted for ACV in most recipes. It is best to use well-fermented Kombucha that has taken on a strong vinegar-like flavor. If your Kombucha is on the sweeter side, adjust any sweeteners in the recipe accordingly.

As a Marinade for Meats. Any recipe calling for cider vinegar or beer as a marinade or stock can use Kombucha. Tougher cuts like brisket and corned beef are especially delicious when roasted slowly in a batch of Kombucha!



RECIPES FOR USING KOMBUCHA

GARDEN PASTA SALAD WITH KOMBUCHA HERB DRESSING

Ingredients:

- ½ cup Kombucha Tea
- 1 cup Olive Oil
- The Juice of One Lemon
- The Zest of One Lemon
- The Juice of One Orange
- The Zest of One Orange
- 1 cup Fresh Parsley
- 1 cup Fresh Basil
- 1 cup Shredded Carrots
- 3 Celery Stalks, diced
- 1 Cucumber, peeled, seeded, and diced
- 1 pound of Pasta, cooked al dente and cooled to room temperature

Prepare the dressing by adding the Kombucha, juice, and zest from both the lemon and orange, the parsley, and the basil to a blender or food processor. As the mixture processes, very slowly drizzle in the olive oil. Add salt and pepper to taste.

In a large bowl combine the pasta, vegetables, and dressing. Toss and either serve immediately or chill for a few hours before serving.

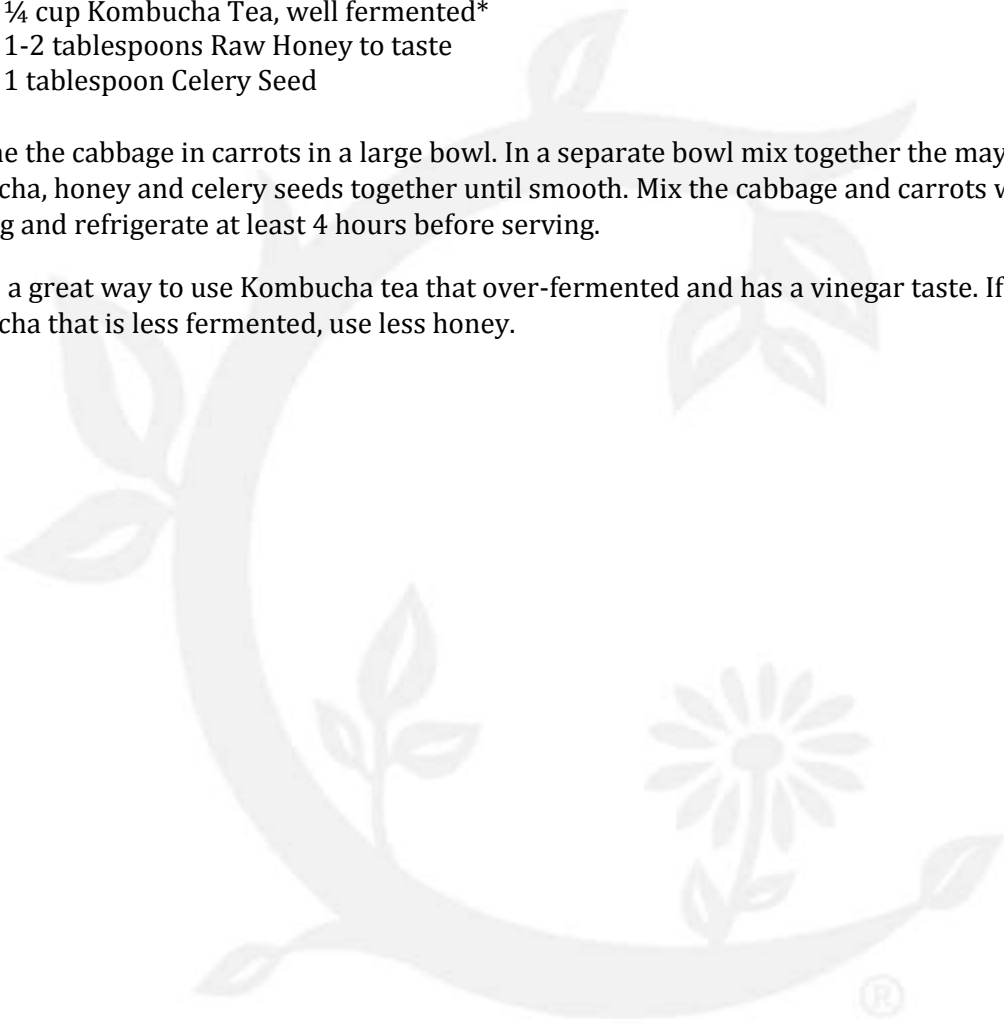
KOMBUCHA COLESLAW

Ingredients:

- 1 lb. Green Cabbage, shredded
- 2 medium Carrots, grated
- 1 cup Lacto-fermented Mayonnaise
- ¼ cup Kombucha Tea, well fermented*
- 1-2 tablespoons Raw Honey to taste
- 1 tablespoon Celery Seed

Combine the cabbage in carrots in a large bowl. In a separate bowl mix together the mayonnaise, Kombucha, honey and celery seeds together until smooth. Mix the cabbage and carrots with the dressing and refrigerate at least 4 hours before serving.

*This is a great way to use Kombucha tea that over-fermented and has a vinegar taste. If using Kombucha that is less fermented, use less honey.



CUCUMBER AND DILL SALAD

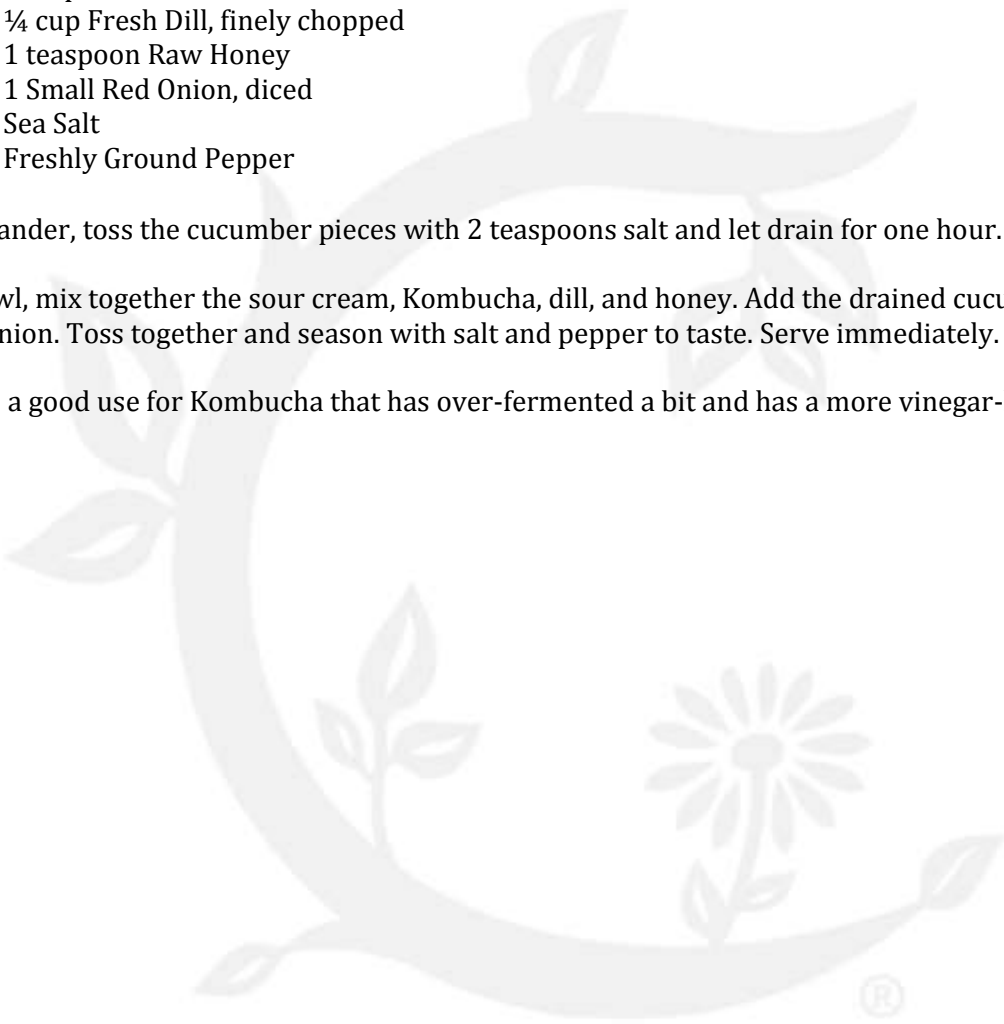
Ingredients:

- 5 Cucumbers, peeled, seeded, and cut into ½-inch pieces
- 1 ½ cups Sour Cream
- ¼ cup Kombucha*
- ¼ cup Fresh Dill, finely chopped
- 1 teaspoon Raw Honey
- 1 Small Red Onion, diced
- Sea Salt
- Freshly Ground Pepper

In a colander, toss the cucumber pieces with 2 teaspoons salt and let drain for one hour.

In a bowl, mix together the sour cream, Kombucha, dill, and honey. Add the drained cucumbers and diced onion. Toss together and season with salt and pepper to taste. Serve immediately.

*This is a good use for Kombucha that has over-fermented a bit and has a more vinegar-like flavor.



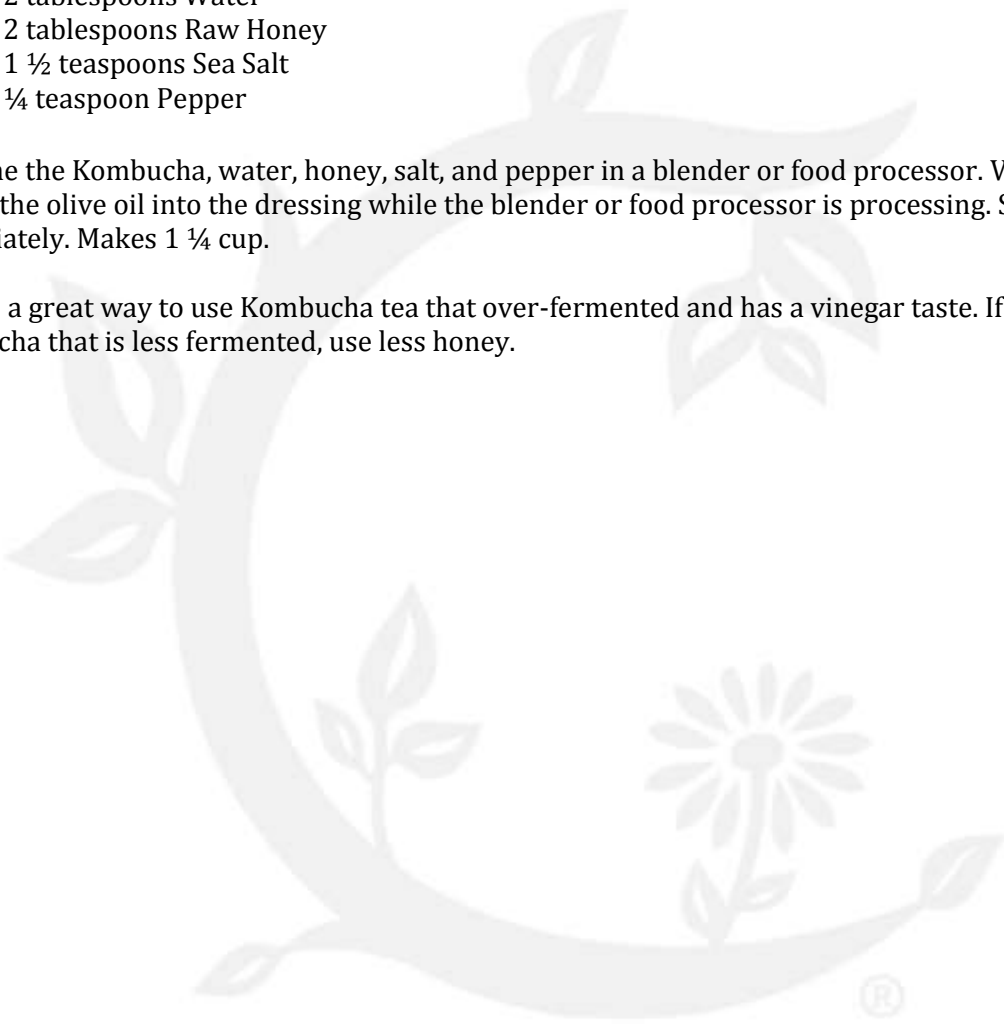
KOMBUCHA AND HONEY VINAIGRETTE

Ingredients:

- ¾ cup Olive Oil
- ¼ cup Kombucha Tea*
- 2 tablespoons Water
- 2 tablespoons Raw Honey
- 1 ½ teaspoons Sea Salt
- ¼ teaspoon Pepper

Combine the Kombucha, water, honey, salt, and pepper in a blender or food processor. Very slowly drizzle the olive oil into the dressing while the blender or food processor is processing. Serve immediately. Makes 1 ¼ cup.

*This is a great way to use Kombucha tea that over-fermented and has a vinegar taste. If using Kombucha that is less fermented, use less honey.



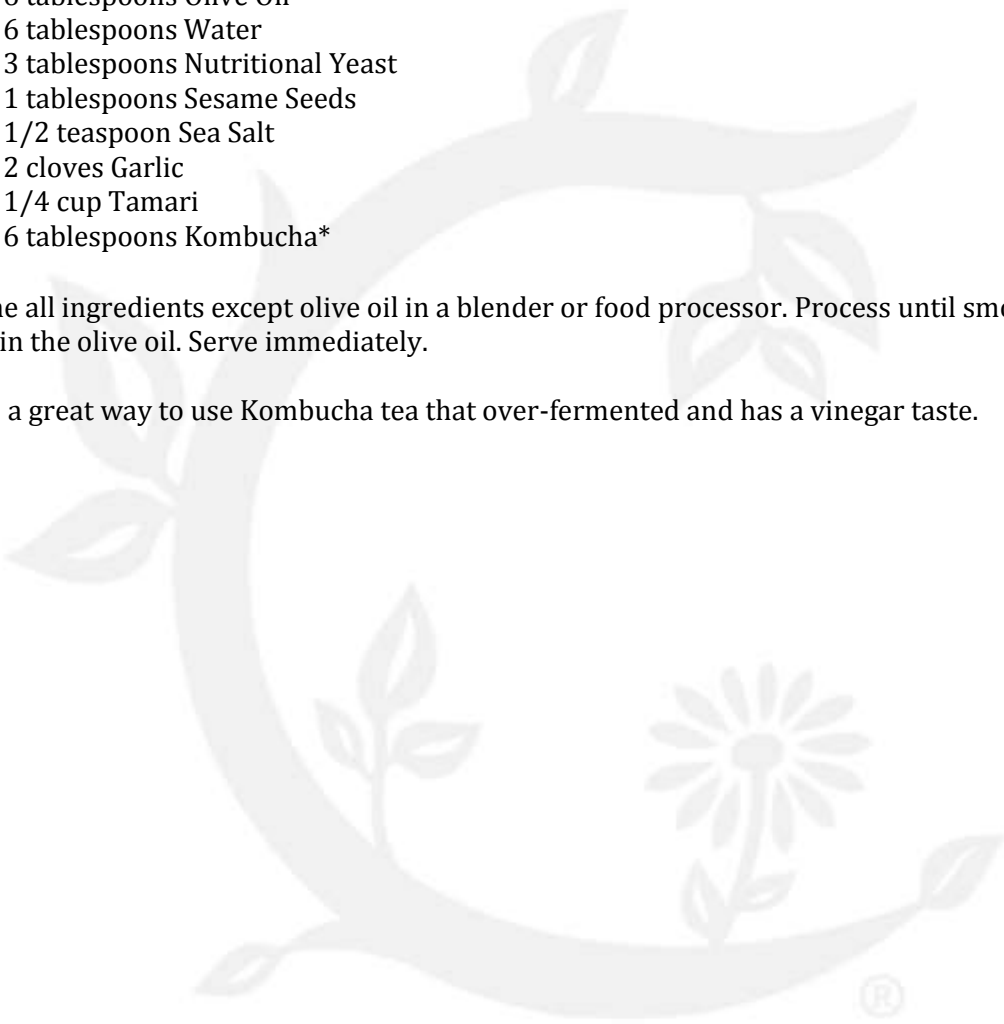
TOMATO KOMBUCHA SALAD DRESSING

Ingredients:

- 1/2 Large Tomato
- 1/4 cup Tahini
- 6 tablespoons Olive Oil
- 6 tablespoons Water
- 3 tablespoons Nutritional Yeast
- 1 tablespoons Sesame Seeds
- 1/2 teaspoon Sea Salt
- 2 cloves Garlic
- 1/4 cup Tamari
- 6 tablespoons Kombucha*

Combine all ingredients except olive oil in a blender or food processor. Process until smooth. Slowly drizzle in the olive oil. Serve immediately.

*This is a great way to use Kombucha tea that over-fermented and has a vinegar taste.



KOMBUCHA CITRUS VINAIGRETTE

Ingredients:

- Fresh Juice from ½ Lemon
- Fresh Juice from ½ Orange
- Fresh Juice from ¼ Lime
- 1 tablespoon Balsamic Vinegar
- 7 Tablespoons Kombucha*
- 2 teaspoons Dijon Mustard (or try Kombucha Mustard)
- 1/2 cup Olive Oil
- 1/2 cup Sunflower Oil
- Lemon Zest
- Orange Zest
- Lime Zest
- Salt and Pepper to taste

Combine the juices, vinegar, Kombucha and mustard in a blender or food processor. Very slowly drizzle the olive oil and sunflower oil into the dressing while the blender or food processor is processing. Add the fruit zests and then season with salt and pepper to taste. Serve immediately. Makes 1 ½ cup.

*This is a great way to use Kombucha tea that over-fermented and has a vinegar taste. If using Kombucha that is less fermented, use less honey.

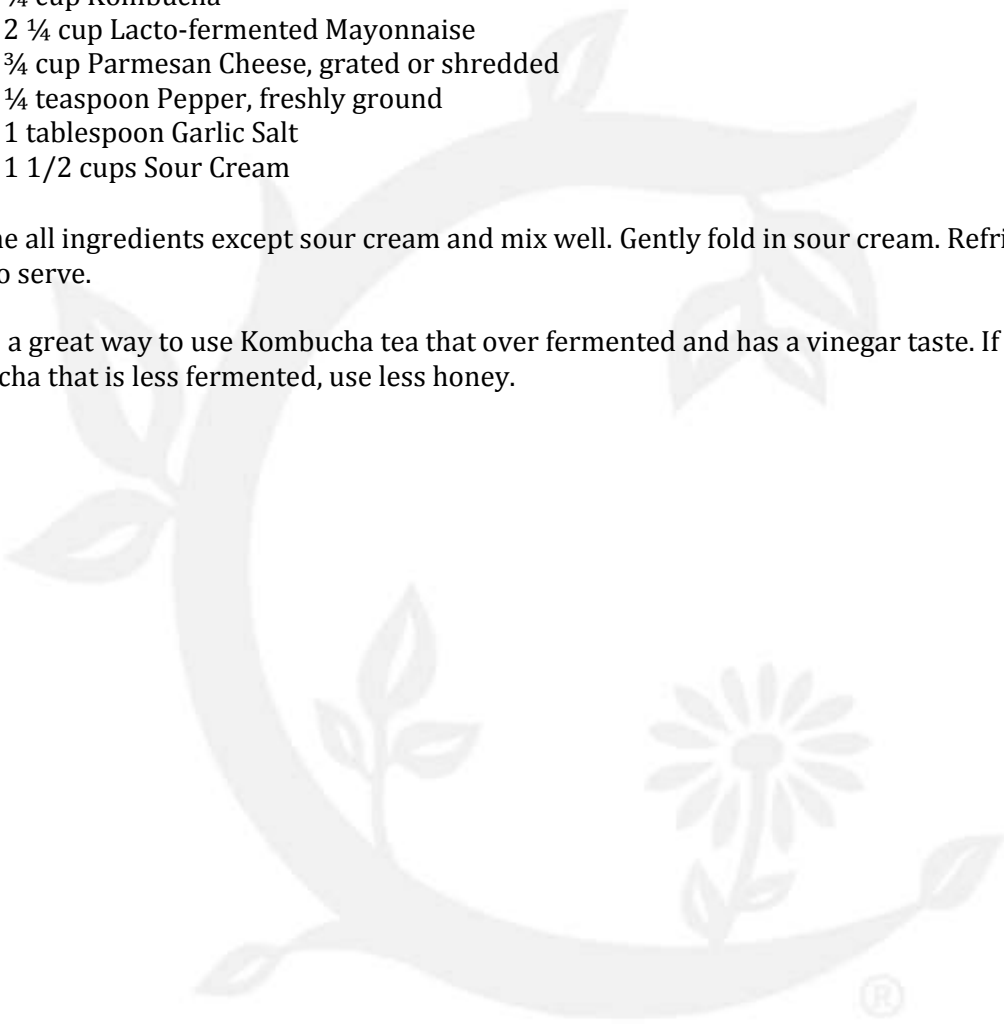
PARMESAN SALAD DRESSING

Ingredients:

- 1 ¼ cups Milk
- 1 cup Cultured Buttermilk
- ¼ cup Kombucha*
- 2 ¼ cup Lacto-fermented Mayonnaise
- ¾ cup Parmesan Cheese, grated or shredded
- ¼ teaspoon Pepper, freshly ground
- 1 tablespoon Garlic Salt
- 1 1/2 cups Sour Cream

Combine all ingredients except sour cream and mix well. Gently fold in sour cream. Refrigerate until ready to serve.

*This is a great way to use Kombucha tea that over fermented and has a vinegar taste. If using Kombucha that is less fermented, use less honey.



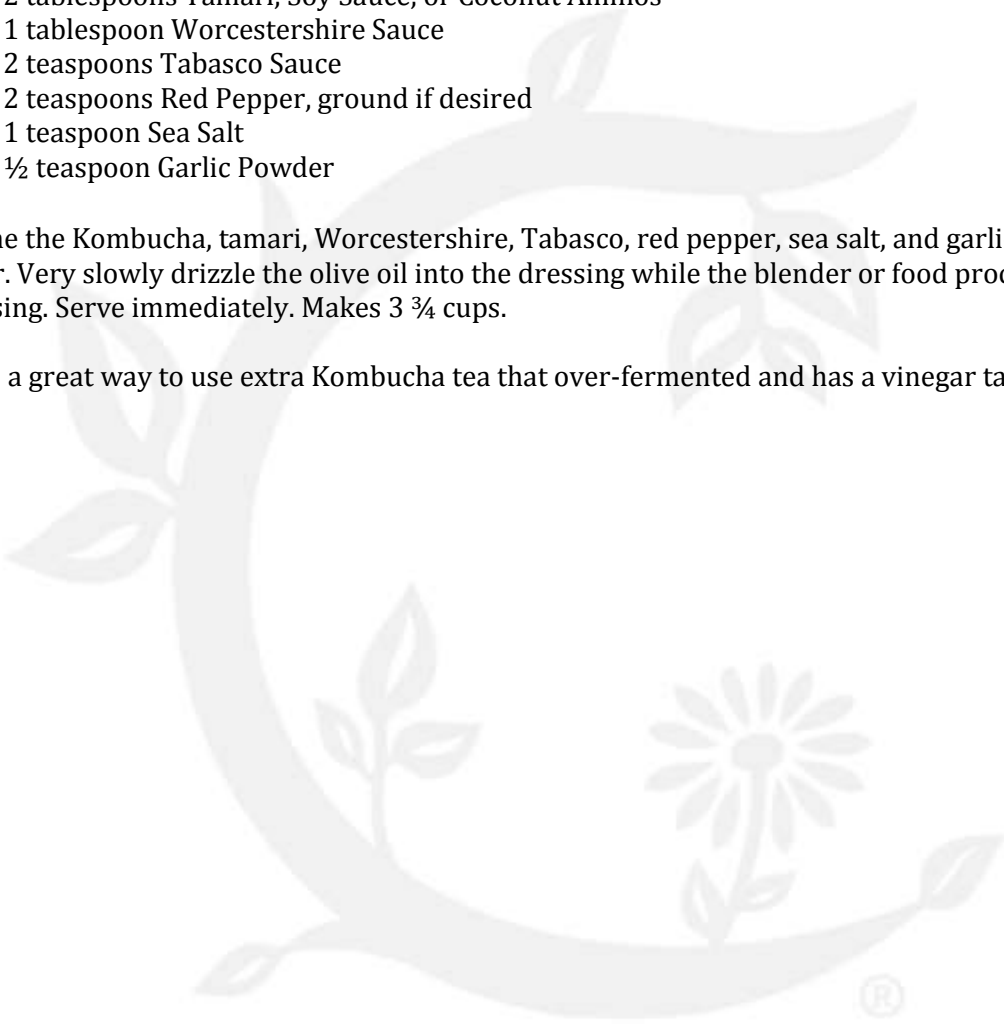
KOMBUCHA TAMARI MARINADE

Ingredients:

- 2 cups Kombucha Tea*
- 4 oz. Olive Oil, Sunflower Oil, or Grapeseed Oil
- 2 tablespoons Tamari, Soy Sauce, or Coconut Aminos
- 1 tablespoon Worcestershire Sauce
- 2 teaspoons Tabasco Sauce
- 2 teaspoons Red Pepper, ground if desired
- 1 teaspoon Sea Salt
- ½ teaspoon Garlic Powder

Combine the Kombucha, tamari, Worcestershire, Tabasco, red pepper, sea salt, and garlic powder. Very slowly drizzle the olive oil into the dressing while the blender or food processor is processing. Serve immediately. Makes 3 ¾ cups.

*This is a great way to use extra Kombucha tea that over-fermented and has a vinegar taste.



MEXICAN-STYLE KOMBUCHA MARINADE

Ingredients:

- 1/3 cup Tomato Sauce
- 1/3 cup Olive Oil or Sunflower Oil
- ¼ Kombucha*
- Juice from 2 Limes
- 2 tablespoons Chili Powder
- 1 teaspoon Cumin
- 1 teaspoon Cayenne Pepper
- 1 teaspoon Onion Powder
- 1 teaspoon Garlic Powder

Mix together and use as a marinade for one pound of beef, chicken or pork.

*This is a great way to use Kombucha tea that over-fermented and has a vinegar taste.



KOMBUCHA MUSTARD

Ingredients:

- Whole Mustard Seeds
- Kombucha
- Sea Salt (optional)
- Herbs and Spices (see below)

Use a glass container or ceramic crock (canning jars work well). Fill the container about half full of mustard seeds. Add sea salt to taste (about ¼ teaspoon per quart). Add well-fermented Kombucha Tea to cover the seeds with about a half-inch of liquid sitting on top of the seeds. Cover the container loosely. A loose lid, towel, or paper coffee filter work well. Check the mustard seeds periodically and add more Kombucha as necessary to keep them covered and moist. As the seeds absorb the Kombucha they will swell and it is important to keep them sufficiently moist. After a week or two the seeds will be soft and will pop when you bite them. At this point the seeds are ready for the blending stage but can continue to sit and ferment for up to a month if desired provided they are kept moist.

Once the seeds are sufficiently soft, use a food processor or blender to blend the mixture to the desired consistency. More Kombucha can be added to give the mustard a thinner consistency. Vinegar can also be added to increase the level of tang.

Customizing Your Mustard:

A number of herbs, spices and sweeteners can be added to create a custom taste your family will love.

- Garlic Cloves: Can be added during the brewing process or the blending stage
- Honey or Agave Syrup: Add during the blending stage
- Chiles: Can be added during the brewing process or the blending stage
- Turmeric: Adds a yellow color if desired; add during the blending stage
- Your favorite herbs: Add during the brewing stage

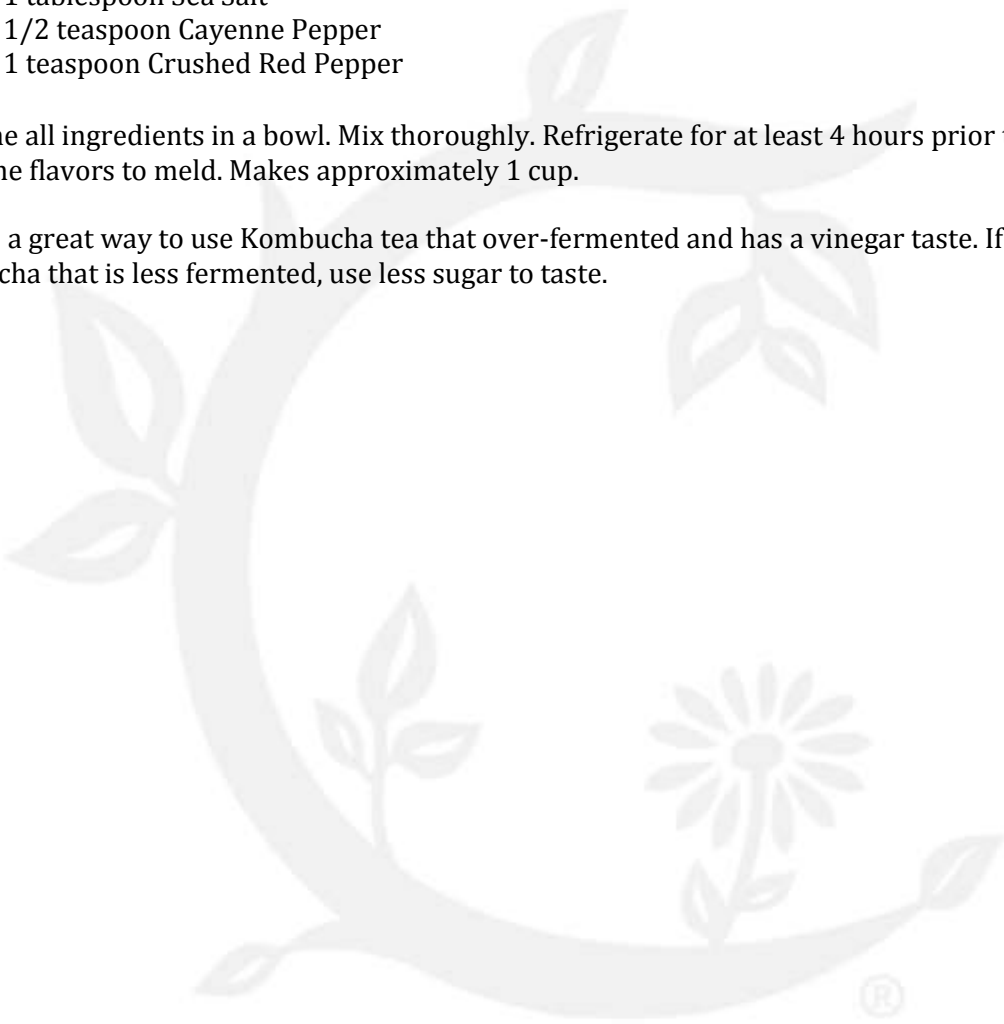
KOMBUCHA BBQ SAUCE

Ingredients:

- 1 cup Kombucha Tea*
- 1 tablespoon Brown Sugar, Rapadura, Sucanat or similar sugar containing molasses
- 1 tablespoon Sea Salt
- 1/2 teaspoon Cayenne Pepper
- 1 teaspoon Crushed Red Pepper

Combine all ingredients in a bowl. Mix thoroughly. Refrigerate for at least 4 hours prior to using to allow the flavors to meld. Makes approximately 1 cup.

*This is a great way to use Kombucha tea that over-fermented and has a vinegar taste. If using Kombucha that is less fermented, use less sugar to taste.



KOMBUCHA “MOCKTAIL”

Ingredients:

- One Part Kombucha Tea
- One Part Pineapple Juice
- One Part Coconut Water

Mix thoroughly and serve over ice. If a true cocktail is desired, add gin or vodka prior to serving.



KOMBUCHA COFFEE

Ingredients:

- 2 quarts Freshly Brewed Plain Coffee
- 1/2 cup Sugar
- Kombucha Scoby

In a glass or ceramic container, dissolve the sugar in the hot coffee and allow the mixture to cool to room temperature. Be sure the coffee is free of leftover coffee grounds. Add the Kombucha Scoby and cover the jar with a tight-weave tea towel, paper coffee filter, etc. secured with a tight rubber band. This covering will allow the gas created during fermentation to escape while keeping bugs out. Allow the jar to sit undisturbed at room temperature out of direct sunlight for at least 7 days. After 7 days, start tasting the Kombucha daily using a straw. Halt the process when the Kombucha Coffee tastes pleasant to you.

Additional Considerations When Making Kombucha Coffee:

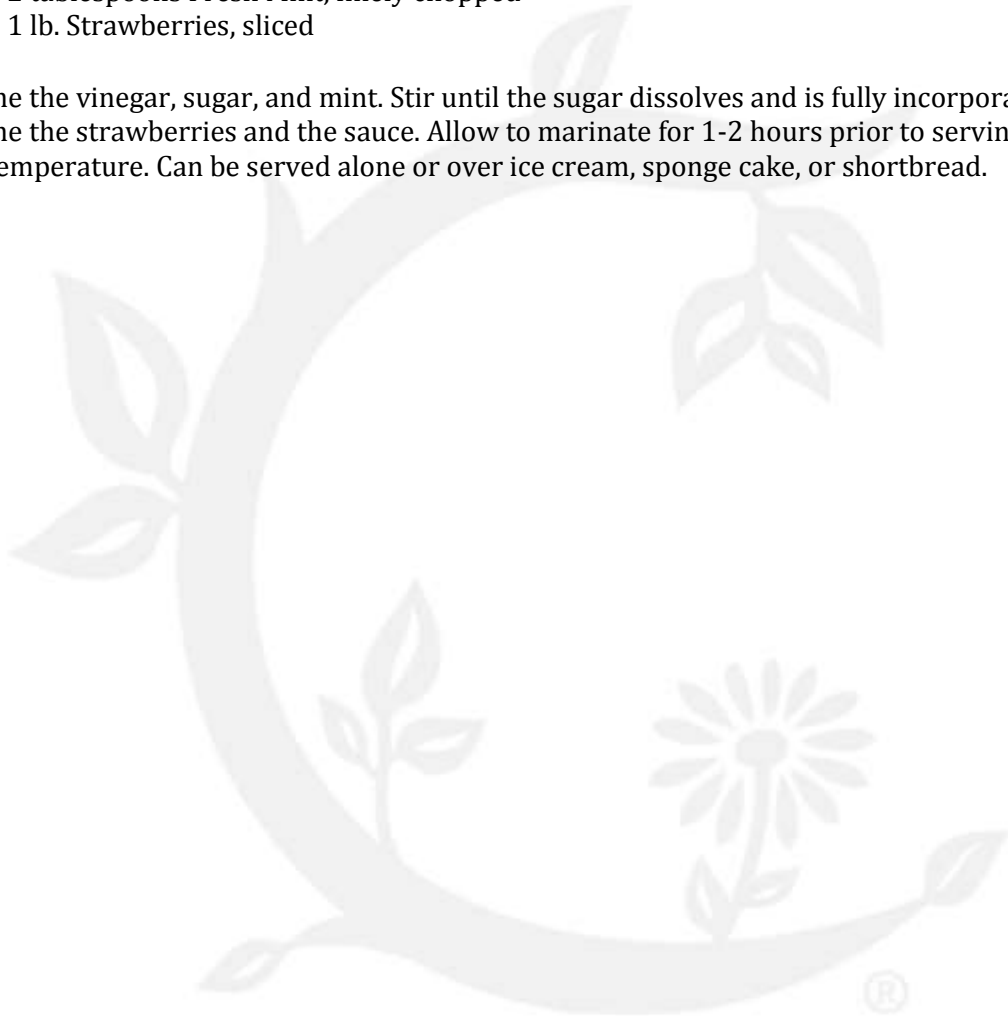
- Coffee is very acidic therefore starter Kombucha tea or vinegar is not required (unlike when Kombucha is made with black, green, or herbal teas).
- Use a spare Kombucha Culture and once a culture is used to make Kombucha Coffee, it should not be used to brew batches of Kombucha Tea.
- Because coffee contains oils, it is possible for rancidity to occur. Watch your batch closely and limit fermentation time to only what is necessary to achieve the desired taste. Never consume any Kombucha that looks, tastes, or smells unpleasant.
- Coffee will generally stain the Kombucha Culture so you may see brown spots on the Scoby.
- Some people claim Kombucha Coffee brews faster than Kombucha Tea while others claim it is slower. Be sure to taste your batch regularly so you can stop the fermentation process at the point you find the taste agreeable.
- Kombucha Coffee should be served room temperature or cold. Do not heat the Kombucha Coffee as heating will destroy most of the beneficial yeasts and bacteria.
- Some people find that Kombucha Coffee is less acidic to drink than regular coffee.

STRAWBERRIES WITH KOMBUCHA MINT SAUCE

Ingredients:

- 2 tablespoons Kombucha
- 2 tablespoon very fine Sugar
- 2 tablespoons Fresh Mint, finely chopped
- 1 lb. Strawberries, sliced

Combine the vinegar, sugar, and mint. Stir until the sugar dissolves and is fully incorporated. Combine the strawberries and the sauce. Allow to marinate for 1-2 hours prior to serving. Serve at room temperature. Can be served alone or over ice cream, sponge cake, or shortbread.





**APPENDIX:
WORKING WITH A DEHYDRATED SCOBY**

ACTIVATING A DEHYDRATED KOMBUCHA SCOBY

Our Kombucha Scobys are sold in a dehydrated state, which preserves the yeast and bacteria present in the culture while greatly reducing the chance of spoilage. We value the safety of our customers! Our Kombucha Scobys can be activated for use through the following rehydration process.

PREPARE THE REHYDRATION SOLUTION

Equipment. [Click here](#) for more information on choosing the best brewing container, cover system, utensils and more.

- One quart-size glass jar
- A plastic or wood stirring utensil (never use metal in contact with a Kombucha Scoby!)
- A breathable cover for the jar such as a tight-weave towel, paper towel, or paper coffee filter
- A rubber band to secure the cover to the jar

Ingredients. [Click here](#) for more information on choosing the best tea, sugar and water source for making Kombucha.

- One [Dehydrated Kombucha Scoby](#)
- 2 tea bags or 1.5 teaspoons of Loose Tea ([click here](#) for more information)
- ¼ cup Sugar ([click here](#) for more information)
- ½ cup Distilled White Vinegar
- Filtered water (preferably free of chlorine, chloramines, and fluoride)

A note about hygiene. When working with Kombucha, it is important not to introduce competing bacteria to the process. Be sure to wash and rinse your hands well prior to working with the tea mixture or the Scoby. Also be sure to thoroughly clean and rinse the container and all utensils that will come in contact with the Scoby. Beware soap and food residue the dishwasher may have missed. When in doubt, give everything an extra rinse. The brewing vessel can be cleaned with regular soap and hot water (rinse several times very well) or with vinegar. Never use bleach on any item that will come in contact with the Kombucha.

ACTIVATING THE SCOBY

- Place hot water and sugar together in a jar. Mix until the sugar dissolves. The water should be hot enough to steep the tea but does not have to be boiling.
- Place the tea in the sugar water and allow the tea to steep. Allow the mixture to cool to room temperature. (This will likely take most of the day if you are making a gallon-size jar.) Remove the tea bag after the first 10-15 minutes.
- Place the Dehydrated Kombucha Scoby and vinegar in the jar of fresh sugared tea.
- Cover the jar to keep the fruit flies out but allow the mixture to breathe. A tight-weave towel or paper coffee filter secured by a thick rubber band works best for this. Do not use an airtight lid!

Choose a safe spot. An ideal culturing spot should be relatively warm but not excessively so. Temperatures between 70° and 80° are ideal. An ideal spot for fermenting Kombucha should be out of direct sunlight. Indirect light or darkness is neither favorable nor problematic. Be sure the spot has reasonably good airflow as access to oxygen benefits the fermentation process. In addition, be sure the Kombucha is not fermenting near a garbage or compost bin, bread made with commercial yeast, or any other cultured foods such as kefir, yogurt, sourdough, sauerkraut, etc. Cross-contamination by stray yeasts and bacteria can be problematic for the Kombucha SCOBY.

Do not disturb. It is important to allow the Kombucha to ferment undisturbed. Moving the jar or otherwise disturbing the contents will not ruin the batch but does make it more difficult to observe the most common signs the process is proceeding normally.

SIGNS THE REHYDRATION PROCESS IS COMPLETE

Allow the SCOBY to rehydrate for 30 days. You can halt the process prior to 30 days if a new baby SCOBY forms on the top of the liquid.

New SCOBY Development. A new SCOBY may or may not form on the surface of the liquid during the rehydration process. While development of a new SCOBY does indicate the rehydration process is complete, lack of a new SCOBY development does not indicate the process failed (see below). A new SCOBY will start out as a cloudy haze or film developing on the surface of the liquid. If left undisturbed, the haze will become less opaque and more white in color and will thicken over time. If the original SCOBY is floating in the liquid, a newly developing SCOBY may attach to the original SCOBY making it more difficult to identify whether a new SCOBY has developed.

Please note: development of a new SCOBY is not required for successful rehydration. If 30 days pass and a new baby SCOBY does not develop on the surface of the liquid, use the following criteria to determine if rehydration has been successful:

- If the SCOBY has thickened it indicates rehydration is proceeding normally.
- Presence of brown stringy yeast particles or brown globs of yeast either floating or sticking to the SCOBY is a sign rehydration is proceeding normally and that active yeast and bacteria are present. Please note: while encouraging, lack of floating yeast particles is not a sign the process failed.
- The SCOBY has developed an extra layer of substance on the top. This could be a piggyback SCOBY and happens when a newly developing SCOBY attaches itself to the original culture.
- If the Kombucha mixture is becoming more acidic, this indicates the process is proceeding normally. To test acidity you can either taste a bit of the mixture using a straw or use a pH meter or pH strip (pH testing strips are available on our site or at most drugstores). A pH level between 2.5 and 4.0 indicates the SCOBY has rehydrated properly.

If 30 days have passed and the signs above are present, it is likely the process has been completed successfully and the rehydrated SCOBY can be used to make a batch of Kombucha. Be sure to retain the liquid used to rehydrate the SCOBY as you will need it to use as starter tea for your first batch of Kombucha. If you have more liquid from rehydrating the SCOBY than you need to make your next batch, you can drink it.

SIGNS OF PROBLEMS DURING REHYDRATION

While problems during rehydration are relatively uncommon, it is important to keep an eye out for these few signs that the process isn't proceeding normally.

30 days pass with no signs of proper rehydration (see above). Click here for additional troubleshooting information. In a small number of cases, live cultures fail for unknown reasons. After reviewing the troubleshooting link, [contact us](#) for additional information to determine if the culture is inactive and if a replacement is needed.

Mold. If you are using appropriate varieties of water, tea, and sugar and adding the acidic component (starter tea or vinegar), the acidic nature of the brew makes it very uncommon for mold to develop. In fact, the most common cause of mold is forgetting an ingredient or using improper ingredient ratios that alter the acidic level of the brew. However unlikely, mold can and does occasionally develop and can generally be seen by the formation of white, green, orange, red, or black spots on the SCOBY or the surface of the liquid. If mold does develop, immediately toss the entire batch including the SCOBY. Do not try to salvage a moldy batch or a moldy SCOBY. Doing so is dangerous to your health. [Contact us](#) for additional assistance.

Pests. The Kombucha mixture is very attractive to ants and fruit flies, which is why we recommend using a tight-weave cover and securing the cover with a tight rubber band to keep the invaders out. If you find worms (maggots) have infested your batch, this is a sign that fruit flies or house flies have invaded and laid their eggs. If this happens, immediately toss the entire batch including the SCOBY. Do not try to salvage an infested batch or an infested SCOBY. Doing so is dangerous to your health. [Contact us](#) for further assistance.

NEXT STEPS

Once your Kombucha SCOBY has finished rehydrating it is time to use it to make your first batch of Kombucha tea. Be sure to retain the liquid used to rehydrate the SCOBY as you will need it to use as starter tea for your first batch of Kombucha. If you have more liquid from rehydrating the SCOBY than you need to make your next batch, you can drink it.

KOMBUCHA SCOBY ACTIVATION TROUBLESHOOTING

Okay, it's been 30 days since you started rehydrating a Kombucha scoby, or maybe this is the first batch after rehydration, and you don't think it's working right even though you followed all the instructions exactly.

Here's a quick troubleshooting guide you can run through before you call customer support, to see if you can figure out what's going on.

IS THERE MOLD IN YOUR KOMBUCHA?

Mold is visible as circular deposits that often look fuzzy or furry. Usually it is blue or green, or sometimes black. If you have mold, you will need to throw out the Kombucha culture and the solution, and start over again. [Contact us](#) for assistance.

If you don't have mold, continue with this checklist.

HOW LONG HAVE YOU BEEN REHYDRATING THE SCOBY?

Less than thirty days. The Scoby is expected to take around thirty days to rehydrate. Let it work until it has reached thirty days.

More than thirty days. By this time you should be seeing some action. Continue with this checklist.

WHAT DOES THE SCOBY LOOK LIKE RIGHT NOW?

It is fatter than it was to start with, and it has brown globs of stuff on it. This is a good sign. The brown globs are yeast accumulations. Your Scoby is probably active.

It is fatter than it was to start with and it has some brown stringy things hanging off it. This is a good sign. The brown stringy things are strands of yeast. Your Scoby is probably active.

It is thin and flat and has no discoloration or markings on it. The Scoby is probably not active. Contact Customer Support for assistance.

It is fatter than it was to start with, but it is plain and clean with no discoloration. The Scoby may or may not be active. Continue with this checklist.

IS THERE ANY SIGN OF A NEW CULTURE (BABY) FORMING?

Note that a new Scoby will not always form in the rehydration process, or even in the first batch or two. This is not necessarily a sign that the culture is inactive. The production of a new Scoby is a byproduct of fermentation, not the end result. Here are some signs of a new Scoby:

- There is a cloudy haze or film on the surface of the liquid. If you leave the Kombucha undisturbed, this haze will thicken and become a new Scoby.
- The Scoby has developed what appears to be an extra layer of substance on its top. This is a piggyback Scoby. The new Scoby has attached itself to the old one. If you like, when you are

done fermenting the Kombucha, you can rip the new layer off the old one and have two Scobys.

- There is no sign of a new Scoby. This is not conclusive. The Scoby may still be actively fermenting Kombucha.

If you have investigated all the possibilities for activity and still believe there is a problem with your Kombucha, continue with this checklist.

WHAT KIND OF WATER DID YOU USE?

It is important that the water contain no chlorine or fluoride, as both are toxic to the Kombucha culture. Chlorine can be removed by letting water stand for 24 hours, or by aerating the water in a blender, or by boiling the water. Since you boiled the water to make the tea, that would remove the chlorine. If you added cool water to the tea, and it contained chlorine, that could be a problem.

If your municipality uses chloramines instead of chlorine, it cannot be removed as easily. You can find out from your water supplier if your tap water has chloramine added to it. Chloramine cannot be removed by boiling or aeration, but must be filtered through charcoal.

You can find out from your water supplier whether your tap water has fluoride added to it. If your water is fluoridated, you cannot easily remove it with standard filtration or with reverse osmosis. (Reverse osmosis will reduce fluoride, but not remove it completely.) If you need to remove fluoride from your water, inquire with a local garden supply store or nursery regarding specialized filters, or use bottled water that does not have fluoride added to it.

If you suspect that you have a problem with the water you used, [contact us](#) for assistance. If your water is not an issue, continue with this checklist.

WHAT KIND OF TEA DID YOU USE?

Kombucha requires real tea (*camellia sinensis*). There are a number of teas made from this plant: black, green, white, pekoe, oolong, Darjeeling, and more.

Herbal teas derived from other plants will not nourish the Kombucha Scoby. You can combine them with real tea. Teas that are flavored with fruits, flowers, or oils can weaken the Kombucha culture.

If you suspect the tea you used could be a problem, [contact us](#) for assistance. If your tea is not an issue, continue with this checklist.

WHAT KIND OF SUGAR DID YOU USE?

Any kind of cane sugar is acceptable for Kombucha. White sugar produces the most reliable results with Kombucha. Unrefined sugar or brown sugar, which contains molasses, can also be successful. Honey, rice syrup, agave, maple syrup, coconut sugar, etc., are not ideal for Kombucha production. Artificial sweeteners (Splenda, aspartame, etc.) or non-caloric sweeteners like stevia or xylitol are absolutely useless for Kombucha production.

If you think you have used the wrong sugar to make your Kombucha, [contact us](#) for assistance. If the sugar is not an issue, continue with this checklist.

WHAT KIND OF VINEGAR DID YOU USE?

The most reliable vinegar to use in your first batch of Kombucha is distilled white vinegar. It has exactly the right acidity (5%) and is completely pure and free of additives. *Pasteurized* apple cider vinegar is also acceptable.

The purpose of adding vinegar to the solution is to create an acid environment that is hospitable to the Scoby. A vinegar that is too weak can inhibit the growth of the Kombucha culture. A vinegar with additives and flavorings can weaken the culture.

Raw vinegar, in particular, can cause problems. Raw vinegar contains its own culture, which is very similar to Kombucha culture. If the vinegar culture is too strong, it can overpower the Kombucha culture and turn it into a vinegar culture or just make it stop working.

If you have used a vinegar other than white vinegar or pasteurized apple cider vinegar, [contact us](#) for assistance. If you have used white vinegar or pasteurized apple cider vinegar, continue with this checklist.

WHAT IS THE ACIDITY OF THE KOMBUCHA?

Kombucha should have a pH between 2.5 and 4.0. Lower than 2.5 is too acid to drink. Higher than 4.0 may not support the Scoby, and can encourage the formation of mold.

You can test the acidity of the Kombucha with inexpensive pH strips available from Cultures for Health or from a pharmacy.

If the pH of the Kombucha is out of range, [contact us](#) for assistance. If the pH is in range, continue with this checklist.

DID YOU USE THE CORRECT PROPORTIONS OF INGREDIENTS?

It's important to get the correct balance of tea, sugar, and vinegar in the solution. The size of the Scoby is not particularly important, as even a small Scoby can produce a good Kombucha.

To make the tea, you should let it steep a minimum of ten minutes, and up to an hour, depending on how strong you like the Kombucha.

The rehydrating solution should consist of about 3 cups water, two teabags or 1.5 teaspoons of loose tea, and ½ cup vinegar. Subsequent batches should use the same proportions.

If you have used different proportions of ingredients, [contact us](#) for assistance. If you used the correct proportions, continue with this checklist.

IS YOUR KOMBUCHA FINISHED?

Taste the Kombucha, using a plastic spoon or soda straw, and judge for yourself whether it is finished. Kombucha should taste rich and vinegary, and possibly slightly sweet (depending on how long it has fermented and how sweet you like it).

If you let Kombucha ferment past the time it has used up all the sugar, it can starve. Most Scobys will rehydrate in about 28 days. Some may take longer, especially in cooler temperatures. About 45 days would be the outside limit. If the Kombucha is completely non-sweet and has been fermenting for 30 days or more, it may be done!

The Kombucha is unlikely to be fizzy at the end of the ferment. To get carbonation, you should decant the solution, bottle it, add flavoring (if desired), and let the sealed bottles sit at room temperature for a second ferment. In three or four days, you should see bubbles and foam in the bottles.



RESOURCES

Visit our website for additional information on brewing Kombucha at home:

[Purchase a Kombucha Scoby and Supplies](#)

[Kombucha Articles and How-to Videos](#)

[Recipes Using Kombuhca](#)

