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THE KOMBUCHA MAMMA

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GENIUS GUIDES

# HOW TO MAKE KOMBUCHA TEA:

## COMPLETE HANDBOOK

WITH  
CONTINUOUS  
BREWING!

by Hannah Crum

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# INTRODUCTION

Welcome to the wonderful world of Kombucha!

This handbook will be your guide to thoroughly understand Kombucha.

It covers not only batch brewing, continuous brewing and all the how-to's, but also Kombucha history, health benefits and lifestyle.

Hi, I'm Hannah Crum, the Kombucha Mamma. I've been brewing Kombucha for over 8 years and I LOVE it! I first started out with the batch brewing method, which was a good testing ground.



When I discovered how much easier & healthier continuous brewing is, I was excited to get that going too! Now I have 4 continuous brewing systems in addition to my many batch brews.

You may already be an experienced brewer or perhaps this is your first time ever hearing about Kombucha. Either way, this guide is here to help you feel supported through the entire process.

I know that you will enjoy having fresh KT on hand. Plus your friends and neighbors will be stopping by for their Kombucha fix too. ;) )

So let's get down to the business of brewing! If you are using this as your guide to making Kombucha, read Chapters 4&5 first. Then when you have a moment while waiting for your water to boil, peruse the other chapters.

I hope you will fall in love with home brewing just as much as I have.



## Welcome to the wonderful world of Home Brewing Kombucha!

*"If you can make a cup of tea, you can make Kombucha!"*

It really is that simple. Brewing Kombucha is a process, a dance if you will, with a living being.

Your SCOBY is alive! No, it isn't going to turn into the blob and eat everyone in your house.

Yes, it looks strange but that's just because it is unfamiliar.

Over time, you will grow quite comfortable with the appearance of Kombucha cultures. Some call them mushrooms, I like to call them full moons.

To be successful at a process, first one must learn the steps. It may not begin to feel familiar until one has brewed for a few cycles. This is normal.

Embrace the natural rhythm and **trust your gut!**

# CHAPTER 1: HISTORY OF KOMBUCHA

## Qin Shi Huangdi - 220 B.C.

The exact origins of Kombucha have been difficult to trace. However, since the chief ingredient is tea, it is purported to have originated in China. The Chinese are legendary in their quest for longevity elixirs and their traditional medicine highly prizes herbs, mushrooms and all manner of natural remedies.

As the story goes, it was formulated for the Qin Shi Huangdi in 220 BC and was called the "Tea of Immortality" as it conferred great health benefits to those who drank it. The recipe was a treasured secret and only shared amongst the inner court.

Like most good legends, there are various iterations. Here is a legend of Kombucha that was shared with me by fellow Kombucha brewer Zhi Ru Yun (支如云) in XinJiang, China.

## Legend of the Sea Treasure

In China, Kombucha has been called "Sea Treasure" (海寶), "Stomach Treasure" (胃寶) and "Sea Mushroom"(海蘑菇). Kombucha's earliest origins are in the Bohai Sea District not too far from Beijing. Stories say that it promotes longevity and it's cultivation was a family secret handed down generation to generation both in the imperial court and amongst the common people.

As the legend goes, there was one family in Bohai that owned a grocery and sundries shop. A shop assistant who worked there rinsed out a honey jar into an earthen crock that once held wine. After a few days, the shop was suddenly filled with a strange waft of a sweet and sour fragrance. Everyone who came to the grocery shop was attracted to the delicious aroma but nobody could discover the source.

After a few more days, the shopkeeper ordered his assistant to sell the wine. When the assistant opened the cover of the wine jar, he immediately cried out, "The sweet-sour flavor is coming from here!"

They all rushed over to have a look, and in the earthen crock there was a thick layer of milky white sticky film sealing the mouth of the vessel. Upon smelling that fragrance and seeing that film, everyone praised the curiosity saying the earthen jar had given birth to a treasure.

At that time it had just been the hottest 30 day period of the year, and the thirsty assistant couldn't resist any longer. He grabbed the dipper and in one gulp drank the whole spoonful, wiped his mouth, not even letting a single drop fall as every on-looker greedily salivated.

Every person in the place had half a dipperful of the delicious, sweet-tart liquid. The shop assistant tried to remember what he'd put in the jar – honey, and water and then he'd let it steep.

From that moment on, he used the same technique to make another batch of "vinegar." The shopkeeper gained wealth and status from selling the drink. He became known as the "Long Life Expert."

Not only did they drink the juice of the vinegar but they also ate the culture prepared cold with dressing (凉拌). After he died at the ripe old age of more than 70 years old, his mysterious treasure was shared with the world and made public. From that time on, it has been handed down for all to use.

Perhaps, this is what has been called the origins of the "Sea Treasure". Still to this day, families in the Bohai district use this ancient technique to ferment their own "vinegar" using their white "vinegar moth" (醋蛾子).

There are also old people who eat the sticky culture in order to alleviate stomach problems and find they also get a burst of energy.

### **Continuous Brew - Method of the Ancients**

The Continuous Brewing Method is akin to the ancient way in which Kombucha was prepared for thousands of years.

Usually it was Grandma or the wise matriarch of the family who was the steward of the Kombucha pot. She would lovingly tend her brewing vessel, carefully serving the perfectly fermented elixir and adding in more sweet tea. She knew the secrets to keeping the SCOBY family (and her family) healthy.

The basic principle of Continuous Brew is that Kombucha is poured from the pot and then more sweet tea is added. Drink a cup, add a cup.

In this manner, a continuous cycle is created ensuring the maximum health benefits with minimum effort.

More about Continuous Brewing can be found in Chapter 5.

## **Emperor Inyoko - 414 A.D.**

It is in this legend that we learn how Kombucha got its name. In Japan, the Emperor Inyoko was very sick. A doctor from Korea, Dr. Kombu, brought him a Manchurian Mushroom to heal him. "Cha" in Chinese means 'tea.' Therefore the drink was called Kombu-cha or Dr. Kombu's tea.

This is a bit confusing for Japanese because there is a tisane (infusion) brewed from the Kombu seaweed that is also called kombu-cha. It could be that the brewed KT looked just like the kombu tea and hence derived its name. The Japanese translation for Kombucha is "kōcha kinoko" 紅茶キノコ (lit. "black tea mushroom.")

Both the samurai of Japan and Ghenghis Khan's men are said to have carried Kombucha with them in skin flasks. They would refresh it with sweet tea as they continued their journey. In times of battle, they would drink the KT to fortify themselves.



## From Russia with Love

From Asia, the Kombucha culture was spread via the Silk Road in the north to Russia and the Tea Horse Road in the south to Tibet, India and eventually all of Europe. These trade routes and the rise of popularity of tea were instrumental in the proliferation of the Kombucha culture.

The earliest references to Kombucha come from 19th century Russia. It was well known in the Kargosok region of Russia that everyone there was in excellent health. The secret was a pot of "miracle fungus" tea that was on everyone's window sill. This further spread the popularity of the tea throughout Europe.

By the 20th century, scientific research of the Kombucha culture had begun and many were validating the claims of those who had been consuming it for generations. It spread throughout all of Europe and was quite popular until World War II. Rationing caused tea and sugar to be scarce and without the 2 main ingredients, obviously, home brewing Kombucha fell by the wayside.

In the 1950's, due to high levels of cancer, it became the focus of research in Russia. Stalin was paranoid about contracting cancer and set his best scientists on the case to discover a cure. He was introduced to Kombucha and was taking it on a regular basis, but a couple of KGB agents, in order to curry favor with the dictator, told Stalin that he was being poisoned. He believed the lie and once again, the tea fell out of favor.

## Stateside Timeline

Word is the Kombucha culture made its way to the US by the 1960's. I've heard murmurs about secretive Kombucha brewing support groups, but details are sketchy. Especially in the 1980's, the anecdotes begin to pickup and Kombucha's presence starts to make itself known. Around 1993, Kombucha really starts brewing here in the US!

Folks such as Betsey Pryor, David Otto, Michael Roussin, Len Porzio, Colleen Allen and many others begin spreading the Kombucha gospel as well as researching the best brewing methods and health benefits. Günther Frank's writings served as the starting point for much of the work done in the 1990's.

The mushrooms, as they came to be called, were passed around neighborhoods and through families, and a great percentage of those who brew in the US may be using cultures from essentially the same lineage started by the folks listed above, though with regional adaptations of bacteria and yeast.

One fortuitous recipient of a "magic mushroom" was Laraine Dave. Laraine had been brewing Kombucha at home and consuming it on a regular basis when she was diagnosed with a rare and aggressive form of cancer. She was given no more than a year to live and yet when she returned for a checkup, it was discovered that the cancer cells had not metastasized. Her doctors were amazed and although she underwent surgery & chemotherapy to remove the tumor, she credits Kombucha with helping her through the whole process.

This is what inspired her son, GT Dave to start his own Kombucha company, GT's Kombucha which also makes Synergy Kombucha. He dropped out of Beverly Hills High and at 15 started his own enterprise from his bedroom. In 1995, he sold his first case of Kombucha to Erewhon. Now 16 years later, he is credited with singlehandedly creating the Kombucha beverage category. This has brought the health benefits of Kombucha to millions of drinkers all over the United States - maybe even you!

My first Kombucha ever was a GT's Gingerade. I was intrigued and delighted. I knew instantly that I had to learn how to make it myself. Call it kismet!

All these years later, I'm here sharing all of the Kombucha lore and wisdom with you. As interest in this ancient elixir has continued to grow, more people have begun to share the Kombucha story, but there is still a lot of misinformation on the internet about it.

My mission is to provide well-researched information about Kombucha, health issues and the other ways in which bacteria and life intersect.

So, let's set the record straight...

## **Kombucha Is Not a Mushroom, People**

Throughout history, Kombucha has been referred to as "mushroom tea" or mysterious "kombucha mushrooms." You might find information on the internet about a "Manchurian Mushroom" or even strange characters in Chinese or Russian that you can't read!

In fact, people have said to me many times, "Oh, I'd drink Kombucha but I don't like mushrooms." I smile and try not to sound like a know-it-all as I gently break it to them that Kombucha isn't a mushroom at all, but rather a **Symbiotic Culture of Bacteria and Yeast**, aka SCOBY.

That's usually followed by a blank stare or a dirty look. Sorry! I'm a nerd. That's why I just had to answer the question, "What is a mushroom, exactly?"

## **Mushrooms Are People Too?**

Well, mushrooms belong to the kingdom of organisms called Fungus. It is a kingdom because it is completely different from plants, animals and bacteria. Fungi are actually more closely related to the animal kingdom than the plant kingdom (kombucha mushroom people!!).

However, while all mushrooms are fungi, not all fungi are mushrooms (and not all fungi are Fun Guys!). Yeast are fungi, so in that regard the Kombucha cultures, in part, belong to the same family as mushrooms, but that doesn't make them a mushroom.

Yeast and mushrooms are distant cousins, not brothers. Who knows, they might not even like each other.

## Does Everybody Call Kombucha a Mushroom?

According to Wikipedia:

- In Russian, the kombucha culture is called *čajnyj grib* or in Cyrillic **чайный гриб** (lit. "tea mushroom"), and the drink itself is called *grib grib* ("mushroom").
- In Chinese, kombucha is called *hongchajun* 红茶菌 (lit. "red tea fungus/mushroom"), *hongchagu* 红茶菇 ("red tea mushroom"), or *chameijun* 茶霉菌 ("tea mold").
- In Japanese, the kombucha drink is known as "kōcha kinoko" 紅茶キノコ (lit. "black tea mushroom")

The Chinese & Japanese words for mold, fungus and mushroom all stem from the same character, so it is most likely the source from whence the initial misnomer arose. A more accurate translation is likely "red bacteria tea" or even "red mold tea." Those names would be a pretty tough sell – so I can see why "Mushroom Tea" might be a preferable English translation.

Ed, the Happy Herbalist, LAc. and long time Kombucha brewer, speculates that the term "mushroom" was applied due to the legendary health benefits that have been ascribed to all kinds of mushrooms. They have long been used in traditional medicine to cure a myriad of ailments and improve longevity.

I think there is something very powerful in this association. Mushrooms are more closely related to the animal kingdom than the plant kingdom. There



is an element of spirituality involved in consuming the "body" of another living thing, or having that living thing create nourishment for you through the sacrifice of its flesh.

The Kombucha starter culture differs greatly from mushrooms on many levels (for instance, mushrooms produce spores, Kombucha culture doesn't) that I believe the only real connection is that the mushroom misnomer has become a legend passed down through the generations.

In French, Kombucha is "le champignon de longue vie" (the mushroom of long life), in Spanish, "hongo" (mushroom), in German, "teepilz" (tea fungus) and so it goes.

Regardless of what you call it, Kombucha for me is all about the symbiosis. It is about the harmony that is created when balance is achieved across all the kingdoms: animal (human), plant (tea), fungus (yeast) and bacteria. To quote Dr. Bronner "All One!"

## **SCOBY – Symbiotic Culture of Bacteria and Yeast**

The term SCOBY was first coined by Len Porzio, author of the website "Kombucha the Balancing Act". In the mid 1990's, he was a member of the Original Kombucha Listserv. There was confusion as to whether Kombucha referred to the beverage or to the mother culture. Len proposed the acronym and it stuck all these years later.

Most commonly pronounced with a short 'o' (like the 'o' in the word 'go') but maybe you like to call it "Scooby" after your favorite cartoon dog.

It is also known as a:

- ✓ biofilm
- ✓ pellicle
- ✓ zooglea (living skin)
- ✓ yeast mat
- ✓ near lichen

The SCOBY is a protective layer built by the bacteria – most often *Acetobacter xylinum*, but could also be any of several other strains – to prevent other non-friendly or pathogenic bacteria from entering their food source while dually serving to reduce evaporation.

The zooglea also acts as home for a large number of yeast and bacteria. Think of it like an apartment building – the yeast live on one floor, bacteria on the next, and so on. They build this cellulose structure to make working together easier.

Finally, the mat makes transferring the necessary bacteria and yeast starter from one batch to the next extremely easy, ensuring continued propagation.

## CHAPTER 2: HEALTH BENEFITS OF KOMBUCHA

Kombucha has been researched in many countries all over the world. Time and again, this natural folk remedy is credited to have a host of healing properties that may include:

- ✓ Probiotics – healthy bacteria
- ✓ Alkalize the body – balances internal pH
- ✓ Weight Loss - reduced sugar cravings
- ✓ Detoxify the liver – happy liver = happy mood
- ✓ Increase metabolism – rev your internal engine
- ✓ Improve digestion – keep your system moving
- ✓ Rebuild connective tissue – soothes arthritis, gout, asthma, more
- ✓ Cancer prevention
- ✓ Alleviate constipation
- ✓ Boost energy – helps with chronic fatigue
- ✓ Reduce blood pressure
- ✓ Relieve headaches & migraines
- ✓ Reduce kidney stones
- ✓ High in antioxidants – destroy free-radicals that cause cancer
- ✓ High in polyphenols
- ✓ Improve eyesight
- ✓ Heal excema – can be applied topically to soften the skin
- ✓ Prevent arteriosclerosis
- ✓ Speed healing of ulcers – kills h.pylori on contact
- ✓ Help clear up candida & yeast infections
- ✓ Aid healthy cell regeneration
- ✓ Reduce gray hair
- ✓ Lower glucose levels – prevents spiking from eating

Simply put, Kombucha is an all-natural health beverage chockfull of probiotics and other healthy amino acids. Probiotic literally means “for life”. Unlike antibiotics, which kill ALL of the bacteria in your body, even the good stuff, probiotics re-establish the natural ecology of the intestinal flora.

Probiotics are said to boost immunity, enhance mood, fight allergies, detoxify the body and rid the body of disease. The Kombucha benefits you experience may vary.

However, **Kombucha is NOT a panacea – it doesn't cure ANYTHING!** It brings the body back into balance so that it may heal itself naturally. That is how it is able to do so much – because it works with your body's natural immune system.

## How Kombucha Works

So if Kombucha is supposed to help with all of these health conditions and yet it doesn't cure anything - then how does it work?

Here are a few main ways Kombucha helps the body:

- ✓ More efficient digestion
- ✓ Acts as an adaptogen
- ✓ Delivers vitamins in bioavailable micro doses
- ✓ Offers healthy low alcohol effects

In the simplest terms, Kombucha allows the body work more efficiently, freeing up additional energy to accomplish other important body processes.

We'll talk more later about each of those beneficial effects listed above.

The benefits of Kombucha are increased over time. The longer one consumes KT, the more health benefits are received. However, when first beginning to drink Kombucha, some people may experience a healing crisis.



## **Kombucha and the Healing Crisis**

Ever heard someone say “I’m allergic to Kombucha?” I suppose it’s possible to be allergic to Kombucha, if you are allergic to tea for example. I’ve never met anyone truly allergic to tea, but I’m sure they exist and should think twice before consuming Kombucha.

Beyond tea, however, the concept of being allergic to Kombucha does not exist, IMO. What those people have experienced upon first starting to drink Kombucha is almost definitely called a “Healing Crisis,” and though it can be scary at first, this is the first wonderful step toward feeling better.

Ever heard the phrase, “It’s going to get worse before it gets better?” Well, in some cases, that’s true. In the case of Kombucha, what might cause a reaction is not the drink itself but the initial effects it is having in your system. Let me explain.

The body is like a huge filing system. Everything good or bad you’ve ever done, your body has a small record of that stored away in fat cells and places like your joints and muscles. If you spent 2 years binge drinking in college, that’s stored somewhere inside you. Run a marathon, your body never forgets.

### **Healing Crisis**

Those who seek out Kombucha often do so because they feel the need for a lifestyle change or an improvement to their diet and routine. That’s wonderful, but often it means the body is toxic and in need of purge. Even if the lifestyle has not been terrible, detoxification will occur. When Kombucha is introduced, the purging begins. Sometimes, too fast!!

It is always recommended that new drinkers start with just a few ounces of Kombucha a day at first, along with plenty of water, and then gradually increase the intake. In this way, the body will slowly begin to release toxins and the water will ensure a smooth elimination process.

However, if the detoxification happens a bit too quickly, and especially if the drinker has previous “illnesses” or weaknesses (acne, prior rash, arthritis, etc), there may be an initial and temporary return or intensification of that previous condition. A breakout on the face or shoulder, feeling “itchy” all over, upset stomach and loose stool are uncommon but completely NORMAL reactions. The Kombucha has introduced pro-biotic life to a system that needs it badly and is ready to kick all the bad stuff out and get healthy!

The informative site The Natural Path lists the following as common symptoms of a healing crisis:

- muscle cramps or pain
- arthritic flair ups
- diarrhea
- extreme fatigue
- restlessness
- headaches
- insomnia
- sinus congestion
- fever
- skin eruptions
- strong emotions or mood swings

The good news is that these reactions are truly temporary and provide just a bump on the road towards better health. However, cut back on, but don't stop your Kombucha intake until the reaction subsides. It will likely move from one part of the body to another and be short in duration.

You should also know that healing reactions are not exclusive to Kombucha. On the contrary, all holistic and naturapathic treatments induce this detoxification process. Kombucha is simply one of the easiest to do for yourself.

Shirley's Wellness Cafe provides some great guidelines for getting through a Herxheimer Reaction (doctor speak for healing crisis) including:

- Drink lots of pure alkaline ionized water
- Get minimal exercise daily
- Lots of sunshine
- Take detoxification slowly ... one step at a time
- Don't increase the dose of herbals
- Keep the organs of elimination (bowels, lungs, skin, kidneys) open
- Take detox baths
- Use aromatherapy oils for aches -peppermint, birch, and wintergreen
- Sweat by using exercise, saunas, baths, and herbs
- Avoid foreign chemicals and refined processed foods

As she says, "The more toxins there are to eliminate, the sicker one is when they come out. Generally, one will feel better when all is over and health is restored again. Just remember, don't give up."

## How Much Kombucha Tea to Drink

Kombucha is a detoxifying agent, so introduction to your system can have immediate and occasionally dramatic effects. For this reason, begin Kombucha consumption slowly to minimize the likelihood of a Herxheimer Reaction, also known as a healing crisis.

Each person's physiology (chemical makeup) is different, so listen to your body.

### START WITH:

- 4oz in the morning on an empty stomach is the best way to observe the direct effects Kombucha has on your system. Follow with water.
- If that goes well, try another 4oz serving before dinner.
  - ✓ Drinking water is critical to the cleansing of toxins. Without water, your body will reabsorb them.

- ✓ An excellent way to enjoy the benefits of KT and flush at the same time is to add 2oz of Kombucha to 6oz of water - just like adding lemon to your water! This also minimizes the acetic flavor which some find difficult to tolerate at first.

### **THEN:**

Listen to your body. If you find you crave it, have some. Should you experience a healing crisis (rash, headache, depression, runs, etc.), cut back the amount you are consuming and drink more water until the reaction subsides (usually a day or two). This is normal. As the toxins release into your bloodstream, they may express in these symptoms.

### **TIPS:**

- ✓ Drinking Kombucha 20 minutes prior to your meal will help to curb your appetite. Or drink it after meals to improve digestive function.
- ✓ If you drink "too much" Kombucha, you will just pee or poo it out.
- ✓ Kombucha is best consumed in small, frequent doses rather than in large quantities.



## CHAPTER 3: KOMBUCHA LIFESTYLE

Kombucha has a way of growing on you, in you, all around you, literally. It has certainly had a profound effect on my life in many ways. I've discovered that Kombucha is a gateway to a healthier lifestyle. No matter where you are in your health journey, Kombucha can provide support.

Kombucha is a gateway to:

- ✓ Reclaiming Health
- ✓ Understanding Process
- ✓ Fermented Foods
- ✓ Empowerment
- ✓ Infinite Abundance
- ✓ Trusting your Gut!

We've touched on the health benefits of Kombucha in the previous chapter. Now let's go more in depth with items listed above.

### Understanding Process

As previously mentioned, Kombucha is a dance, a process. In the current state of American culture is such that the consumer cannot afford to sit back and trust the government to protect its citizens. We have to educate ourselves or fall prey to the constant drone of advertising that bombards our psyches on a daily basis.

Got an ache? Have this symptom? Pop a pill! Want to be skinnier? Look younger? Plastic surgery! Want to eat healthy food? Lose weight? Drink diet soda! Our consumer culture has the cure to everything that ails us. The problem is, oftentimes the cure is worse than the disease.

The message that is lost in all this noise is that good things come to those who wait. There is great value in realizing that the time, effort, energy and love that you put into a process, along with a little patience, will be

rewarded. The process of brewing Kombucha is simple and yields many benefits. Engaging in this process provides tangible and visible proof that good things do come to those who wait.

## **Fermented Foods**

Why Choose Kombucha over other Fermented Foods? Well, first of all, you don't have to! Choose to incorporate multiple fermented foods into your diet for optimum benefits.

Here's why Kombucha should be the "star" of your fermented cast of characters:

1. **Most Versatile**

Kombucha can be enjoyed at any time of day. Before, during or after meals. Plus, it can be flavored with almost anything - from sour to sweet to savory and more. Anyway you want it!

2. **Easiest to Make**

Set it and forget it. Literally as easy as making tea.

3. **Least Expensive**

Kombucha can be made for about .05 cents a serving. Compared to what you spend in the store, that's a significant savings.

We have become afraid of cooking. Processed foods that you pop in the microwave have eliminated many steps and in the process, confidence.

When Kombucha brewing becomes second nature, that confidence returns and the idea of creating other fermented foods becomes exciting; an adventure to be relished rather than a burdensome chore.

## **Empowerment**

The cultural brainwashing through traditional media outlets has made us soft and weak. Humans are tough, resilient and adaptable. We have been

sold a bill of goods that says feeling pain is unnecessary, undesirable. We should never have to feel discomfort – here take a pill, drink some coffee, eat some chocolate, watch TV. All of these are means of avoiding that which we need to confront – our feelings of disconnectedness, our feelings that something isn't right with this world, our feelings that our bodies are sick and need to be healed.

Mastering the simple process of brewing Kombucha leads to feelings of empowerment. The ebb and flow reminds us that we are a part of nature and the cycles that all of nature tunes into. In the winter, Kombucha likes to hibernate. In summer, Kombucha thrives. Confidence in the kitchen returns as familiarity and knowledge replace fear and mistrust.

### **Infinite Abundance**

Kombucha is always making more of itself. It co-evolved with humans in order to support us through life. It is a hearty organism (has to be to survive with us!) that is always making more of itself. Try this experiment - leave a glass of Kombucha on the counter for a couple of days. When you check the glass, you will see that a new SCOBY is starting to form.

As you return to your Kombucha pot week after week, you are rewarded with a new culture. Bearing witness to this phenomenon becomes a powerful testament of the infinite abundance all around us.

### **Trust Your Gut**

Drinking Kombucha is an opportunity to invite healthy organisms into the internal eco-system also known as the microbiome. As science delves deeper into the mechanics of our innermost world, they discover vast universes hitherto unarticulated. Their discoveries further validate that which has already been understood on a cellular level. Without the proper types of bacteria populating our guts, our health suffers.

The enteric system (from esophagus to colon) is our second brain. Evolved from the same tissue as the brain in our heads, it has its own ability to

sense, feel, remember and react.

These are our "gut feelings." This is an entire system of intelligence that is just beginning to be understood in scientific terms. This intelligence is our heritage; it has been passed down to us from mother's breast and our natural environment from the second we emerge from the womb. Kombucha provides a means of reconnecting to this innate wisdom.

## **BACTERIA**

While in the womb, the body floats in amniotic fluid, weightless and sterile. As the baby passes through the birth canal, it is instantly colonized with bacteria. These bacteria play a crucial role in the development of the immune system, digestive tract and cognitive functioning. In fact, bacteria outnumber human cells 9 to 1. We are more bacteria than we are human!

The antagonistic attitude toward all bacteria, this so called "germ warfare" began in the 19th century. At that time, hygiene was not well understood and people were susceptible to all types of infection and illness due to unsanitary habits and living conditions.

Louis Pasteur made several important discoveries, most notably, pasteurization – the use of high temperatures to kill bacteria. This undoubtedly saved many people from harmful illness, but it led to the misunderstanding that all bacteria were dangerous and needed to be eradicated. Louis ultimately recanted this notion on his deathbed.

But it was too late, the war on germs had begun and it hasn't stopped. It has increased and with the ubiquitous use of hand sanitizers and constant antibiotic prescriptions, the problem has worsened.

The WHO reports that due to the over prescription of antibiotics the world over, superbugs are on the rise. Populating the gut with "good" bacteria prevents contamination by harmful bacteria.

Good bacteria are often referred to as probiotics. They protect the enteric



system in several ways. They line the walls of the intestines which prevent “bad” bacteria from having a place to land. They also build the mucosal lining and they release immunoglobulins which boost immunity.

When too much processed food is consumed, the bacterial environment of the microbiome also changes. Due to the high amount of sugar in processed foods, sugar loving bacteria find a happy home. Once they take up residence, they send signals to the body demanding more sugar in order to reproduce. This leads to candida overgrowth and other auto-immune problems as the body is out of balance.

By incorporating “good” bacteria (found in ALL fermented foods) into your diet, the “bad” bacteria gradually are forced out. Fermented foods have been consumed by humans since the beginning. It was the earliest form of food preservation. The refrigerator has only been around for the last couple of hundred years, prior to that, people relied on fermentation to preserve the harvest for consumption during the winter and other fallow months.

Good bacteria also return the body to a more alkaline pH. Disease thrives in an acidic environment. Cancer tumors LOVE sugar! If you had the power to prevent cancer, you would, right? As The sugar bugs are forced out, cravings decrease – in fact, you may find that most processed foods don’t taste good at all. And the body regains its natural instincts and ability to “tell” you which foods are most nourishing.

Drinking Kombucha, making Kombucha at home – or kefir, or sauerkraut, or sour dough bread, or ...the list goes on and on, all contribute to recolonizing the body with the good stuff, restoring balance and allowing the immune system to function properly. This empowers you in a simple and inexpensive way to take control of your health!

## CHAPTER 4: HOW TO MAKE KOMBUCHA TEA

There are 2 methods to brew Kombucha. I use both of them for different purposes. While many people start with the batch brew method, most brewers find that continuous brewing is the easiest way to maintain your culture long term.

### Continuous Brew vs. Batch Brew Method

In the **batch brewing method**, you brew a bunch of sweet tea and combine with a little bit of delicious starter liquid, a **super sweet 9/1 solution**. (90% sweet tea to 10% starter liquid) After **1-2 weeks**, the SCOBY and starter liquid work very hard to transform the 90% sweet tea into Kombucha.

Continuous Brew makes it much easier. **When you've used about 25% of the CB Kombucha, just refill the brewer with sweet tea.** No mess & no contaminating the SCOBY.

75% of your brewer will be mature Kombucha and SCOBY, this time a **powerful 3/1 concentration** in favor of the Kombucha. It will take **only a day or two** to transform that relatively small amount of sweet tea into healthful Kombucha.

How much you are consuming dictates how often you need to top off your system. It really is the easiest method!

### Principles of Batch Brewing

Batch Brewing is normally done in containers that are 1-gallon or less. Nutrient solution is made, the culture is added and then allowed to ferment for its brewing cycle.

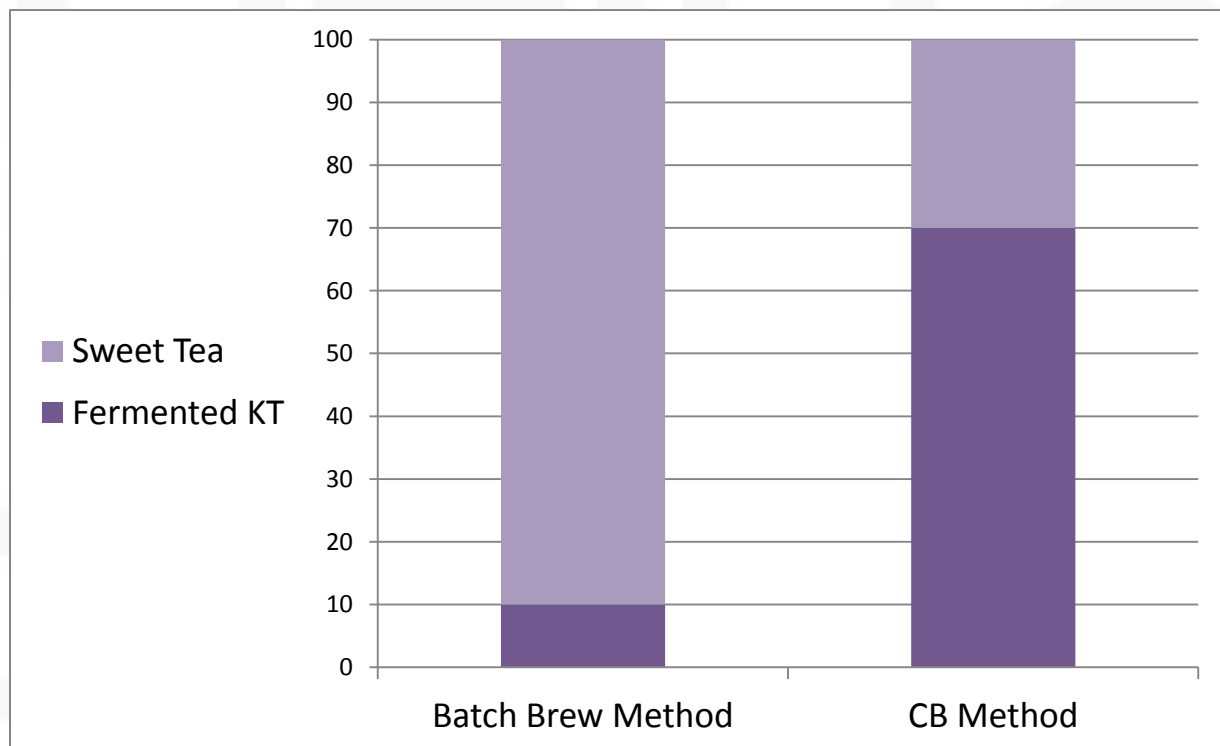
Then, when the KT is ready, the culture along with the new layer are removed along with a cup of fermented KT to act as starter liquid for the next batch. The entire rest of the vessel is decanted into bottles where flavors may be added and the process is repeated.

## Principles of Continuous Brewing

Continuous Brewing (CB) is the method of the ancients. The brewing vessel size is typically larger as the majority of the KT is left in the vessel in order to gain the maximum benefit.

Once the initial brew has fermented, then 25-30% of the KT is removed or drunk and a fresh batch of nutrient solution is added to the top.

The spigot on most Continuous Brewers greatly reduces the mess and effort of Batch Brewing. The cycle becomes "drink a cup-add a cup."



By retaining a larger amount of fermented KT as the starter liquid, what normally takes 5-10 days in the batch brewing method now takes only 2-3 days for the sweet tea to turn into KT.

This shortens the brewing cycle and reduces the amount of handling of the culture which minimizes risk of contamination.

There is another added benefit to CB - more healthful acids are expressed in the fermentation process both at the 15 day mark and again at 30 days. In a Batch Brew, the KT would most likely be way too sour to be enjoyable at either of those times.

However, with the CB method, because not all of the KT is removed, you receive the benefits while tempering the flavor with the fresh sweet tea.

Continuous Brewing is covered in further detail in Chapter 5.

## **Kombucha Brewing Process**

Whichever way you brew Kombucha, you will likely find that it is a pleasurable experience. To ensure success, first read all of the directions prior to starting your first brewing session. None of the steps are difficult, but they must be done in the proper order and at the proper time. Then, while you are brewing, refer back to this manual to stay on track.

Let this be a fun ritual, a time to unwind and engage your body and let your mind relax. Put on some music or enjoy the silence, tune into your environment and do your dance!

If after reading this chapter, you find you still have questions, join the Kombucha KommUnity online. Read the forums, post questions and enjoy geeking out on a fun hobby - Kombucha brewing!

The illustrated DIY Guide is attached as an appendix. For easy step-by-step instructions, refer to this guide. The subsequent chapters will discuss several elements of the brewing process in further detail. Below is the basic recipe for brewing any batch of Kombucha.



**FULL-SIZE  
KOMBUCHA CULTURE  
(SCOBY) KIT BREWING RECIPE**

**Supplies**

- ✓ Tea kettle or pot
- ✓ 1 gallon glass container
- ✓ 3 quarts of purified water (NO CHLORINE\*)
- ✓ 1 cup of sugar (NO STEVIA OR XYLITOL)
- ✓ 4-6 tea bags or 4-6 tsp loose leaf tea
- ✓ Genuine Kombucha SCOBY – **INCLUDED**
- ✓ 1-2 cups of starter liquid – **INCLUDED**
- ✓ Custom KKamp Jar Cap or cloth cover w/ rubber band (NO CHEESECLOTH)

**If you ordered 2 Full Size Cultures, both may be added together to 1 vessel or added to 2 separate 1 gallon vessels.**

**Common SUMMER Question: What if my SCOBY arrives hot? NO PROBLEM! 😊😊😊**

The SCOBY can withstand normal travel conditions including heat. Sustained temperatures of over 108 degrees are required to begin harming the culture. The SCOBY is very hardy and can withstand brief exposure. **Expect a successful brew!**

**Common WINTER Question: What if my SCOBY arrives cold or frozen? NO PROBLEM! 😊😊😊**

Allow the SCOBY to come to room temperature in the bag (not in the sun). Once thawed, allow to rest in the bag an additional 24-48 hours, then brew as normal. The SCOBY is very hardy and can withstand brief exposure. **Expect a successful brew!**

**Makes ¾-1 Gallon of Kombucha Tea**

1. Heat 4 cups of purified water in a tea kettle or pot.
2. Just as the water starts to boil, turn off heat & let cool 1-2 minutes, then add to the brewing vessel. Make sure the vessel isn't too cold or it could crack.
3. Add 4-6 tea bags (black, green, white, or a combo). Steep 7-15 minutes.  
*If using loose leaf tea, 1 tsp = 1 tea bag.*
4. Remove tea/tea bags and stir in ¾-1 cup of sugar until dissolved.
5. Add 2-3 quarts (8-12 cups) purified water; this should lower the temp of the boiled water to lukewarm (test with hand to make sure). No warmer than body temp (~100°F). *(The amount of water added depends on vessel size, leave enough space for the culture, starter liquid & a little airspace).*
6. Add entire contents of plastic bag (SCOBY & 1 cup strong starter liquid).  
**In future batches, retain 1-2 cups from the top of the brew to use as starter liquid.**
7. Cover container with a tightly woven cloth and rubber band or custom made KKamp Brewer Cap.
8. Set your intention, bless your booch or just say thanks. (optional, but recommended)
9. Place the container in a warm, ventilated area out of direct sunlight for 7- 21 days (depends on taste). 75- 85°F (24-29°C) is the best range, 80°F (27°C) is ideal. It may or may not get fizzy. **The SCOBY may rise to the top or sink to the bottom, doesn't matter, the new culture will always form at the top.**
10. When ready to test your Kombucha, gently slide a straw beneath the new SCOBY and have a sip. When it has the right balance of sour and sweet...decant. 😊😊 **SEE BOTTLING INSTRUCTIONS ON BACK!!** 😊😊



**\*\*NOTE – Small variations in tea or sugar used are not a concern. Increase or decrease the amounts to find the flavor you prefer, but never use less than ½ cup sugar or 3 bags/tsp of tea per gallon.**

*\*To dechlorinate tap water, allow to sit out overnight uncovered or boil for 10 minutes then cool to needed temp.*

**Good vibes, crystals, happy music, and talking or singing to your Kombucha will encourage positive growth. Your SCOBY is a living organism - treat it with care and it will be your booch buddy for life!**

**Newbie Brew Tip** Kombucha thrives between 75 - 85 degrees. In most environments, a heating mat, even part time, is critical to long term brewing success.



**WATCH VIDEO NOW**  
at  
[KombuchaKamp.com/Heating](http://KombuchaKamp.com/Heating)

• Unless you see mold, the brew is normal and the Kombucha is safe to consume

**\*Ideal temp: 80°F   \*Ideal range: 75-85°F   \*Keep out of direct sunlight   \*Ideal pH = 3.5-2.5**



## Common Question: Oh No! I think I have mold!!! WAIT! DON'T PANIC!!! ☺☺☺☺☺☺☺☺☺☺

Usually what is mistaken for mold is **normal** SCOBY or yeast growth. Mold on Kombucha looks like mold on bread: dry, fuzzy and sitting on top of the culture, usually in circles and colored white, black or green.

**For examples and more info VISIT THIS LINK: [KombuchaKamp.com/Mold](http://KombuchaKamp.com/Mold)**

**If you still think it's mold, DO NOT THROW ANYTHING AWAY!!**

Send a picture to [customerservice@kombuchakamp.com](mailto:customerservice@kombuchakamp.com) for identification and assistance.

## Bottling & Flavoring Kombucha

- The addition of fruit sugar at this stage will increase carbonation. Tight fitting lids are best.
- Use bottles you have on hand (reuse and recycle!) or source high quality glass bottles locally.
- Experiment with flavors that excite you! Fresh fruit, flowers, barks and berries are all good choices. ☺☺☺

**Warning: Use caution! Bottles can overflow when opened or explode during secondary fermentation.**

**Store filled bottles in a box, empty cupboard or cooler to minimize mess & danger.**

**Also, NEVER add flavors to your brewing vessel as essential oils or other bacteria could harm the culture.**

**For more bottling tips, VISIT THIS LINK: [KombuchaKamp.com/Bottling](http://KombuchaKamp.com/Bottling)**

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1. With clean hands, remove the culture(s) and place in a clean bowl.
2. Ladle or pour 2 cups of liquid **from the top of the brew** over the cultures. This will serve as starter liquid for the next batch.
3. Cover cultures with a cotton cloth and set aside.
4. Find clean, suitable bottles with tight fitting lids. Recycled bottles are fine, but avoid metal lids that may corrode. Flip tops are nice.
5. If flavoring the Kombucha, place fruit/juice/flowers/whatever(!) directly into the bottles. A little goes a long way. Experiment to find new favorite flavor combinations.
6. Place bottles in sink, insert funnel into the first bottle and ladle/pour in the Kombucha.
7. Repeat for the other bottles, straining the yeast if you prefer. Fasten the lids and set aside 1-3 days, burping the bottles to release carbonation and prevent explosions (if necessary).
8. Move bottles to the fridge as they reach the desired carbonation/flavor. This slows flavor changes.



**Common Questions: How do I start the 2<sup>nd</sup> batch? And store SCOBYs?** Start the 2<sup>nd</sup> batch with the original SCOBY and the baby, plus 1-2 cups of starter liquid from the first batch. Once you have a 3<sup>rd</sup> SCOBY, move any one you like to a **SCOBY HOTEL** with some mature Kombucha, add a couple of cups of sweet tea. Leave the Hotel undisturbed for a few weeks this first time, this allows the strength of your Hotel to increase and for a thick culture to grow across the top.

**For long term Hotel maintenance, plus a video, VISIT THIS LINK: [KombuchaKamp.com/Hotel](http://KombuchaKamp.com/Hotel)**

## Advantages of Continuous Brew

1. **BREW MORE SAFELY**
2. **LESS CLEANING, LESS MESS**
3. **SAVE TONS OF TIME & MONEY**
4. **PERFECT FLAVOR, ALWAYS ON TAP FOR YOU**
5. **GET THE HEALTHIEST KOMBUCHA BREW POSSIBLE**



**NO-FRILLS Package**

## HOW DOES CONTINUOUS BREWING WORK?

"In the batch brew method, every time you brew, you make a bunch of sweet tea and combine with a little delicious starter liquid, a super sweet 9/1 solution. After 1-2 weeks, the SCOBY and starter liquid work very, very hard to finally transform ALL that liquid into Kombucha Tea (KT)..."

**COMPLETE Package**



**DELUXE Package**



By contrast, with your Continuous Brew System, you will only be refilling around 25% of the container with sweet tea nutrient solution, while 75% is your mature Kombucha and giant SCOBY, this time a powerful 3/1 concentration in favor of the Kombucha. It will take only a day or two to transform that relatively small amount of sweet tea into healthy KT..."

**NEXT TOPIC:** Increased health benefits?

[Find out more >>](#)

[KombuchaKamp.com/CB](http://KombuchaKamp.com/CB)

## SCOBY Hotel

The Kombucha SCOBY is always making more of itself with each new batch. I like to leave 2-3 cultures together but then it is time to move the bottom culture to your SCOBY Hotel. The SCOBY Hotel is an important tool in every homebrewer's arsenal.

### WHY HAVE A SCOBY HOTEL?

- Your culture gets infested with fruit flies, vinegar eels, mold
- Your friend wants to make Kombucha too
- To experiment with different teas, roiboos, yerba mate, raw honey, etc
- You are going on vacation and can't brew KT on your regular schedule

### HOW TO MAKE A SCOBY HOTEL:

1. Grab a clean jar – at least a quart size or bigger
2. Put an extra SCOBY in the jar
3. Cover with Kombucha Tea
4. Hide in the back cupboard

### STORING YOUR SCOBY HOTEL:

You can cover this jar in a couple of different ways:

- a. With a cloth cover; the liquid will evaporate more quickly and you will need to check it more frequently.
- b. With a screw on lid; it's ok if this lid is metal, provided it doesn't come in contact with the KT in the jar. This will cause the liquid to evaporate more slowly.

Whenever you encounter any problems with your brewing process, use a SCOBY from your Hotel. It's great to have a couple, three of them hanging out, just in case. From time to time, make sure there is enough liquid in the jar and refresh with unflavored Kombucha Tea when it starts to get low. That's it! The SCOBYS will just hang out in the pool until you need them!

**For long term Hotel maintenance, plus a video,  
VISIT THIS LINK: [KombuchaKamp.com/Hotel](http://KombuchaKamp.com/Hotel)**

## CHAPTER 5: CONTINUOUS BREWING

Continuous Brewing is about finding a balance with your Kombucha. Where the batch method is more regimented and scientific in terms of steps, CB is like a dance. Drinking daily from your brewer will allow you to become in tune with your flavors and intensity and adjust accordingly.

It is a process, one that requires a certain amount of patience and surrender. Whether you are a "touchy-feely" type or not, there is no denying you are inviting living organisms into your body, so finding symbiosis with your Kombucha is an important long term goal.

### Ingredients & Supplies

1. **SCOBY** – Symbiotic Culture of Bacteria and Yeast – also known as a "mother." You will want to have at least two 6-inch diameter cultures (about 5 oz. by weight)
2. **Starter Liquid** – At least 1 cup per gallon. Use the size of your brewing vessel to determine how much you will need.

My standard 2.5 gallon vessel will require **2 gallons of sweet tea**, which **means 2 cups of starter liquid**. If you do not have ample starter liquid, you may use distilled vinegar as a substitute.

The other .5 gallon is comprised of the starter liquid, culture & some space left at the top of the vessel for the culture to breathe & grow.

3. **Purified Water** – Chlorine kills ALL bacteria, even good bacteria in our culture, so chlorinated water **MUST NOT** be used to make KT.

Methods for de-chlorinating include:

- Allow a pot of water to sit out for 24 hours. the chlorine will evaporate, leaving cleaner water.

- Boil the water for 5 minutes at a brisk boil, then allow to cool to room temperature (so as not to harm the yeast!)
- **BEST OPTION** – use a water filter, such as an home under-sink system, a Brita pitcher, or spring water.

4. **Tea** – I always recommend using organic, fair-trade (when available) loose leaf tea because it reduces waste (no tea bags, staples, extra packaging to throw away) and provides the maximum health benefits as no harmful pesticide residues will end up in your Kombucha. *(To know which tea is best for Kombucha, see Chapter 7)*

You can use decaffeinated tea. See the box below to learn how to avoid the chemical process by decaffeinating your tea naturally.

### **How To Naturally Decaffeinate Tea**

- Steep tea** in near boiling water for 30-45 seconds.
- Discard the liquid.**
- Use the same tea leaves** to brew your Kombucha according to the recipe provided.
  - ✓ Caffeine reduction ranges from 50% - 75%.
  - ✓ Commercially decaffeinated tea is usually done so via a chemical process.
  - ✓ Tea loses some anti-oxidant properties even through natural decaffeination.
  - ✓ Additional caffeine will be removed through the Kombucha fermentation process.

5. **Mesh Tea Ball** or **Muslin Tea Bags** – When using loose leaf tea, you may elect to use either a tea ball or muslin bag to keep the tea leaves from getting into the nutrient solution. They are both easy to clean and last a long time.

- **Mesh Tea Ball** - The tea ball's large capacity allows for expansion of the tea leaves, however some bits of tea leaf may get loose and end up in your Kombucha (note that they may end up on the surface of your SCOBY – it's not mold, just a tea leaf!)
- **Muslin Tea Bags** - These 100% cotton bags are great for any loose leaf tea – be it for making Kombucha or using with the included sipping tea. The bags are easy to clean and use again and again. They also hold finer particles better than the tea ball.

### **How To Clean A Reusable Muslin Bag**

- Empty the tea from the filter bag** once it has cooled. Check out the Forums on the KommUnity for great ideas as to how to use your old tea. Compost or make potpourri.
- Rinse the filter bag** with warm tap water; rinse both the inside and outside. Do not use soap.
- The tea bags will darken over time** due to the tannins in the tea; this is a natural process of seasoning the filter bags.
- Hang to air dry** (sunlight provides an extra freshening effect).
  - ✓ From time to time, throw them in the laundry for a more thorough cleaning.



6. **Pot, Tea Kettle, Electric Tea Kettle, the Sun** – Anything to heat the water to make the tea. You can also make sun tea if you like. I find the electric kettle to be the most efficient means.
7. **Cloth Cover & Rubber Band** – Kombucha needs oxygen to ferment properly. You can use a large rubber band or twine, but make sure it is both a tight weave and securely fastened to prevent fruit fly infestation.
8. **Continuous Brewing Vessel** – At a minimum, it should hold 5 quarts. The best vessels are made of glass, porcelain or stainless steel. Make sure it has a spigot for easy removal of the KT. The spigot must be made of plastic (no metal!) and not contain a metal screw.

## Set Up

Select the location for your Continuous Brewing Station. I recommend housing it on a kitchen counter or any place that is warm, has good airflow and is conveniently located.

If your brewing vessel is opaque, it can be placed in sunlight. If it is transparent, it should be kept in a dark, yet well ventilated location or draped with a large cloth to prevent sunlight from damaging the culture.

1. **Attach the Spigot.** The washers are beveled on one side and flat on the other. Place one washer flat side toward the spigot - you may have to wiggle it on - make sure it is all the way on. Insert the spigot into the hole in the brewer. Wiggle the second washer flat side toward the brewer into place. Screw the plastic nut on tight so that both washers are flush against the brewer thus ensuring a tight seal.

✓ **YOU MUST TEST TO CONFIRM THE SPIGOT IS LEAKPROOF BEFORE ADDING YOUR KOMBUCHA.** To do this, fill it with enough water to cover the spigot and leave it for a few hours to make sure that there isn't any leakage around the spigot. If there is, unscrew it, re-adjust the plastic washers and tighten. Test again.

2. **Assemble the Crock Stand** according to the included instruction sheet. Phillips head screwdriver required. The stand has adjustable feet for use on uneven surfaces.
3. **Sanitize/Cure the Brewer.** Curing sets the proper pH for the brewing environment as well as cleans away any foreign substances or debris ahead of introducing our culture.

Pour some distilled vinegar (never raw) into the brewer and swish it around to coat every part of the vessel. Dump out the remaining liquid.

## First Batch Recipe

This is an adaptation of the 1-gallon recipe. Depending on the size of your vessel, scale it up. For example, if your brewer is 2.5 gallons, then double the recipe.

Directions for subsequent batches of “top-off” tea follow below. Extra nutrient solution may be stored in the fridge for about 1 week.

While sanitation is important, don't go overboard - we don't want to harm the good bacteria that are housed in the SCOBY. Avoid anti-bacterial soap and chlorinated water.

- ✓ **Best Option** - use distilled vinegar to rinse your fingers before touching the culture.

### Before You Start...

- ✓ **Brewing Kombucha is a process**, a dance if you will. At first it will take a little getting used to all of the steps and doing them in the correct order. After a few cycles, you will find your own rhythm.
- ✓ **I like to put on relaxing music**, light some candles and get into my Kombucha “brew groove.” Most important is to have fun!

**Read the directions completely** at least one time through so that you know what you will need to have ready. Here we go...

## Directions - First Batch

1. **Boil Half a Gallon** (that's 2 Quarts....okay, 8 cups!) of purified water in a pot. When the water just starts to a boil...
2. **Add the tea to the pot.** Again scale the tea depending on the size of your vessel. For a 1 gallon vessel it is 3-5 tsps – multiply the number you use by the size of your vessel. For a 2.5 gallon vessel, it would be 6-10 tsps.
3. **Remove from (or just turn off) burner.**
4. **Steep** for 5-15 minutes. Set a timer and do something else.
5. **Remove** spent tea leaves.
6. **Add** sugar to your tea. 1 cup per gallon = 2 cups for a 2.5 gallon sized vessel.
7. **Stir mixture** with a spoon until sugar is completely dissolved.
8. **Add** 1 gallon cold purified water to the vessel. **Then pour** the tea & sugar mixture (aka nutrient solution or sweet tea) into the Brewer.
9. **Assuming a 2.5 gallon size vessel, add about 1 quart more cold water fill the brewer over  $\frac{3}{4}$  full**, leaving enough space from the top of the brewer for the culture to breathe & grow. **Test the water** with your hand to make sure that it is below body temperature, aka lukewarm.
10. **Add** the SCOBYs and starter liquid.
11. **Cover with a the KKamp Fermentation Cap or a 100% cotton cloth**, secure with a rubber band.
12. **Allow to ferment for 10-28 days depending on your brewing environment and personal taste preference.** When you are

ready to try it, pour yourself a sip from the spigot. **Taste once a day** until the flavor is just the right mix of sour and sweet for you. Then you are ready to either decant into bottles and flavor or just **tap yourself a glass whenever you'd like to have a refreshing "booch break!"**

### **Ways to Enjoy Kombucha:**

- a. **Straight Up** - ice mellows the flavor.
- b. **Mixed with Juice/Soda/Water** - add a splash or mix it half and half, especially good for batches that taste too tart.
- c. **Mixed with Alcohol** - alleviates symptoms associated with hangovers, detoxifies the liver and flavors well with spirits.



## Quick Tips

- ✓ **Allow the sweet tea mixture to cool** to the right temp before adding it to the brewing vessel and then adding the SCOBYs. If it's too hot, they will die instantly. Yeast is sensitive to heat and you need them to survive – they are the “Y” in SCOBY!
- ✓ **Don't fill the brewing crock all the way to the top**, leave room for the culture to grow. I usually fill to the top of the wide part of the vessel. It narrows near the neck of the brewer – leave that space free as breathing room.
- ✓ When you begin brewing, **let the brewing crock sit undisturbed for at least 8 days** before sneaking a peek. After that time, you may notice white spots or a gelatinous substance forming on the top layer of the liquid. This is the new SCOBY that's beginning to form. If you see brown spots or globs, relax, these are the yeast strands, not mold.
- ✓ **You may start to sip at Day 7**, but leave it covered!
- ✓ **Mold is extremely rare when making Kombucha**, but especially if using the Continuous Brewing method. Mold will appear fuzzy and gray, black or blue, similar to bread mold. Other bumps, spots, and holes are likely caused by gas trying to escape by pushing through the SCOBY, which is perfectly normal. (*See Chapter 8 for more on mold.*)

## When to Add Top-Off Tea & Top-Off Tea Recipe

When to make and add “top-off” tea is **up to you**. **The longer you ferment booch, the less sugar** it contains and the tarter the flavor.

After a few uses or if you've decanted into bottles, remove the cloth cover and observe how much liquid remains inside the Brewer. When the liquid is about 6 inches below the neck of the vessel (where it narrows), then it is time to add more nutrient solution.

This is the **recipe for 1-gallon of Nutrient Solution**. Scale according to your needs.

1. **Boil 1 quart (4 cups) of purified water.**
  2. **Remove from heat.**
  3. **Add 4-5 organic tea bags** (4-5 tsp of loose leaf tea) and allow to steep 5-10 minutes.
  4. **Remove the tea** bags and **stir in 1 cup of sugar** until dissolved.
  5. **Add 3 quarts of purified water**; this should bring the temperature of the water down to lukewarm (test with hand).
- ✓ **Extra solution can be stored** in an airtight container in the fridge for up to a week. Then, whenever you have emptied about 25% of the Kombucha from your Brewer, add more top off tea. **Allow 1-3 days to fully convert** – taste each day.
  - ✓ **The more times the process is repeated, the more instinctual it will become.** You will immediately recognize when you need to add tea, how much and how long it will take to reach the flavor you like. Be observant of temperature and seasonal changes as it will ebb and flow.

## Continuous Brewer Maintenance

You can leave your cultures in your brewer for long time. More cultures will form OR the original culture may grow extremely thick. **I recommend cleaning your Continuous Brewer 2x a year** or once every 4 months, though you could probably go a full year without issue.

1. With clean hands (no soap, use vinegar please), **remove your cultures to a sterilized glass container or cookie sheet** (see SCOBY TRIMMING on the next page). Set aside 5 cups of the KT to be used as starter for the new batch and to protect the culture while out of its natural environment. Cover the SCOBY and the liquid with cloth covers to protect from fruit flies.
2. **Drain the remaining liquid** from the Brewing Crock - Either pour the KT into bottles or, if there isn't much liquid left, dump out the dregs where the spent (dead) yeast collect.
3. **Sterilize the Brewing Vessel** with distilled vinegar. Remove all of the oogle bits and brown strands to keep your brew in balance.
4. **Remove the spigot and run under hot water.** You may find pieces of Kombucha culture lodged inside as it will grow wherever it can get access to oxygen. Simply pull them out and toss.
5. **Replace the spigot and make sure it is securely fastened.** Test for leaks.
6. **Brew a fresh batch** of nutrient solution per the instructions listed above.
7. **Add the culture** (trim first, see below) and starter liquid.
8. **Cover and wait 8 days!**

## SCOBY Trimming

Eventually, your mother culture inside your Continuous Brewer will grow too large for your vessel to accommodate. Instead of waiting for that to happen, it's best to **give your culture a "hair-cut"** while you already have it out for brewer maintenance.

The culture may be heavy and a bit difficult to handle. Use both hands to remove it from the vessel, allow it to fully drain all the liquid back into your brew, then place in a large bowl, or if that's too small, use a cookie sheet with wax paper or plastic wrap (I put kitchen towels underneath for stability and soak-up duty).

Start by removing the **oldest layers, which will be found on the bottom side of the culture.** They will be **darker in color due to prolonged exposure to the tannins in the tea.** You may be able to pull layers right off the bottom of the culture.

If the layers don't peel apart easily, **trim the culture with sanitized scissors.** After the bottom brown layers have been removed, trim around the edges until it is about two-thirds to one half its previous size, depending on your needs.

You can gift the remaining pieces of culture to friends so they can brew their own, you can use them to brew in other containers or you can **add them to your SCOBY Hotel.** The brown layers should be composted or used in the garden.

## Continuous Brew Kombucha FAQ

### At what point does this pot of sweet tea turn into Kombucha?

It is technically defined as Kombucha once it reaches the pH of 3.0. At this level, it has a natural, anti-microbial layer that protects it from harmful pathogens. However, it may drop to this level far before you are ready to drink it due to the amount of sugar present. Depending on your personal preferences, you may like the taste of Kombucha at 7 days, or 10 days, or more! It is up to you and what your body tells you is the right flavor for you.

### How do I use pH strips to test the brew?

As mentioned above, the nutrient solution technically becomes Kombucha when the pH level drops to 3.0. Ideal pH for KT is 3.0-2.5. Pour a small amount of KT onto the strip to activate it. Then compare to the color chart to determine the correct pH. Once it crosses that threshold, taste it. Then, use your palate as your guide to tell you when the Kombucha is ready.

### What if my Kombucha is too vinegary after 8 days?

If you find the flavor of the Kombucha to be more tart than you prefer, you can add it to juice, sparkling water, or add an ice-cube. If it is still too sour, then drain off 1 gallon of the tea and set aside to use for household cleaning, hair tonic or to give to your pet (small doses with food).

Then, make a fresh batch of nutrient solution and add it to your vessel. Taste immediately and note the flavor. Now, taste it every day until you find the right balance of sweet and tart.

### What if my Kombucha is too sweet after 8 days?

Continue to allow it to ferment. Taste it on a daily basis until it has the flavor you are looking for. The longer it ferments, the less sugar it will



contain. This is perfect for diabetics or others who wish to control their sugar intake.

## The Kombucha tastes delicious – now what do I do?

You have 2 options.

1. **Drink from the tap.** Pour a fresh glass in the morning or whenever you need a “booch break”. Flavor by adding juice.
2. **Decant into bottles.** I recommend starting with 4-6-16oz bottles at a time. You can add flavoring agents to the bottles. *(See Chapter 6 for detailed instructions)*

Once you have a fully mature brew, pour the flavorings into the bottle, and then place the bottle under the spigot of the brewer. Fill the bottle up to almost the very top so that little air is left. Screw on the cap tightly to seal in the carbonation. Leave out of the fridge for 2-3 days in a dark place.

This is the Secondary Fermentation stage. During this time, the flavorings that you have added, especially fruit juices or anything with natural sugar, will re-activate the yeast and produce additional carbonation and flavor. Additional alcohol may be created, bringing your average glass of booch to somewhere between .8% - 2% ABV. Use herbs as flavoring instead to avoid this side-effect. It is also possible to enhance this process to create champagne or beer like flavors.

After a couple of days, taste and if the flavor is to your liking, move to the fridge to maintain. If you are like me, your booch might not even make it to the fridge. It will continue to ferment in the bottle and keeping it cold will slow that process. Monitor and burp the bottles as necessary.

## CHAPTER 6: DECANTING & FLAVORING

Bottling is one of the most enjoyable stages of the Kombucha process. Flavoring your Kombucha (my favorite part!) becomes possible plus carbonation can be increased.

And of course, bottles make carrying your booch around much easier than lugging around a gallon jar or Continuous Brewer.

Here are some of the most common questions and topics about bottling Kombucha.

### **Why bottle Kombucha?**

Kombucha tastes great straight from the jar or Continuous Brew, especially over ice.

When the brew has reached the flavor you like, the best way to maintain that flavor long term is to bottle and store your Kombucha in the refrigerator, (aka Fermentation Slowing Device). Bottling also allows you to start a new batch while saving some Kombucha to drink for later.

One of Kombucha's secret superpowers is how flexible a beverage it is, adapting well to many flavors. The possibilities are endless with the addition of countless fruit, herbs, veggies, mushrooms and just about anything you can dream up.

Even better, any beneficial elements present in your flavorings will be passed on to you through the Kombucha. Moreover, with a few tricks, bottling your Kombucha presents an opportunity to boost the bubbles to try to mimic your favorite commercial brand.

## How to Bottle Kombucha

Bottling Kombucha is a simple process.

In short:

1. **Insert a funnel** into the bottle neck.
2. **Add flavors** (optional).
3. **Carefully pour** fermented KT in the bottle.
4. **Cap.**
5. **Wait 1-4 days.**
6. **Enjoy.**

If you have a Continuous Brewer, simply hold your bottle under the spigot and use the tap, no funnel required.

### Types of Bottles to Use

I recommend using recycled glass bottles or jars with a tight fitting, non-metal lid (if possible). Wine or champagne bottles work as well, with the added benefit that if too much carbonation builds up, the cork will pop out before it explodes the bottle. Messy though! Flip top bottles are very popular and look fantastic, but can be pricey.

Plastic is an option. The bottle will harden and swell due to the accumulation of CO<sub>2</sub>. While Kombucha is tested as safe to use with food grade plastic, plastic bottles should be used only once during the flavoring stage and then recycled.

## Flavoring Kombucha

Use your imagination! I recommend using fresh fruit when it is in season, whole or pressed ginger, or fresh herbs (rosemary, thyme & sage are nice).

If your Kombucha is too tart to drink, then add garlic and spices to create a healthy vinegar that may be used in marinades or salad dressings.

In the winter, use dried fruit, jam or juice to achieve your fruity flavors. Dried herbs and spices may also be used at anytime.

A little bit of flavoring goes a long way with Kombucha. A good rule of thumb is about ¼ -½ tsp of flavor per 16oz bottle. For more intense flavor, increase the amount used. Experiment and discover your preference.

## Can I flavor in anything other than the bottle?

Sure. If you have extra brewing jars, you can flavor right in the jar. First, remove your culture to either a new batch of sweet tea (don't forget at least a cup of starter liquid – 2 is better – from the top of the current batch) or to your SCOBY Hotel, then add your flavors and screw on the lid.

## Bottle Conditioning

Bottle conditioning is the term used in other brewing industries to describe what happens to the ferment while in the bottle. I generally recommend leaving your bottles or jars at room temperature for 1-4 days for maximum flavor. Taste daily until the desired flavor is reached, then move to the fridge to preserve this flavor.

Weather will affect the speed of flavoring as your brew will be more active in warmer months.

**For more bottling tips, VISIT THIS LINK:**  
**[KombuchaKamp.com/Bottling](http://KombuchaKamp.com/Bottling)**

## Burping & Exploding Bottles

When flavoring Kombucha in the bottle, and sometimes even without adding flavoring, there is a chance that active Kombucha bottles may explode due to excessive CO<sub>2</sub> build up. This can obviously be a major safety hazard if not prepared for appropriately.

While explosions are rare, new brewers should be particularly aware and cautious. "Burping" bottles is a recommended step when you are leaving your KT out of the fridge. To do so, slowly unscrew the cap, allow the CO<sub>2</sub> to escape, then tightly recap. This will prevent excess CO<sub>2</sub> from causing your bottles to explode.

To be safe, bottles may be stored in a separate box, cupboard or cooler to prevent damage or harm and to contain the mess should an explosion occur. When first starting out, bottles ought to be burped on a daily basis.

## Shelf Life

Although the fermentation process will continue in the bottle, even with a tight lid, Kombucha never technically "goes bad" or spoils. The pH of the KT is low enough that it inhibits the growth of other microorganisms.

Kombucha has an indefinite shelf life. Commercial brands are required by law to have an expiration date stamped on them. If you come across a bottle past its date, you may be able to consume it, however depending on how old it is, the flavor may become unpalatable.

I've had bottles of KT age 3-6 months, some more than a year. It definitely changes the flavor. Sometimes the results are good, but often it just tastes kind of old and limp is the best I can describe.

Many people (including me) enjoy the taste of Kombucha at room temperature. Using caution, you may keep your bottles at room temperature indefinitely.

## **Filtering the Brew**

Some people prefer to filter out the brown strands (spent yeast). Adding cheesecloth or a funnel with a strainer to the process makes it easy remove them, otherwise bottle as usual.

I do not filter my brew so that the maximum amount of culture remains in the KT, keeping it alive. However, I generally out pour the last bit of brown dregs from the bottom of the bottle.

Some people drink the yeast as they are a great source of B vitamins (think brewer's yeast).

## **Ooglies**

It is near impossible to prevent your Kombucha culture from continuing to grow, even without oxygen. Keeping the bottles in the fridge will slow the growth of new culture, but it won't necessarily prevent it from occurring. It's just part of the miracle of Kombucha that it is always making more of itself!

You can drink the ooglies. Many people believe that the most concentrated form of the healthful acids is present in the culture itself. I treat an oogle in my glass or bottle as an oyster shooter; open wide and swallow whole. Gulp!

It isn't required to eat the oogle, so if you find it not to your liking, simply dump down the drain or into your compost pile.

## **Simple Flavoring Recipes**

Here are a few of the recipes that I've grown to enjoy. This is one of the



most fun elements of brewing Kombucha. Let your imagination go wild! Experiment with amounts of flavoring, mix and match or pick a favorite and go with that.

### Summer Breeze

- pinch chamomile flowers
- pinch lavender flowers

### Pink Lemonade

- fresh strawberries (add more for more berry flavor)
- pinch hibiscus flowers
- sprig of thyme
- fresh lemon juice

### Tibetan Delight

- 2 pinches goji berries
- fresh ginger, finely chopped

### Peachy Keen

- fresh peach
- pinch chai spice

### Jade Dragon

- tsp/tbsp greens (chlorophyll, E3 Live, spirulina, etc)
- pinch cayenne
- fresh ginger

Elderflower (as a tisane or just the flowers), Rose Petals, Vanilla Bean, any fruit and even veggies & herbs can be combined in a myriad of ways to please your palate. Moreover, the health benefits of the flavorings will be passed on to you through the booch.

## CHAPTER 7: ELEMENTS OF BREWING

## How to Select the Best Brewing Location

There are 5 factors to consider:

- **The ideal temperature** for brewing Kombucha is between 72-84 degrees F (23-28 degrees C).
- **Kombucha requires oxygen** to thrive.
- **Keep out of direct sunlight.** Bacteria do not like direct light, preferring a darker, dryer environment.
- While fermenting, **Kombucha does not like to be disturbed**, so it should be placed out of the way.
- **Kombucha does not mix well with strong smells**, flowering plants or greasy food preparation.

If you examine these factors, they will lead you to a quality custom brewing location in your home.

### Good ideas:

- ☺ **An upper shelf in a pantry or kitchen closet.**
- ☺ **An open cupboard.**
- ☺ **On top of your kitchen cupboards.**

### Bad Ideas:

- ☹ **Under the Sink. (No No No! Mold!)**
- ☹ **In a cupboard with the door closed. (No airflow, thin SCOBYs)**

### About Continuous Brew Location

- ✓ As the **Continuous Brewer is opaque**, sunlight is not an issue, unless it will be shining directly into the opening of the brewer.
- ✓ **To take full advantage of the convenience of CB**, it is important to find a location from which both the spigot and removable cover can be easily accessed.

## Brewing Safety Tips

| DO's  | DON'T's   |
|---|---|
| <p><b>DO – Sanitize the brewing location &amp; supplies prior to use.</b></p> <p><b>DO – Rinse hands with filtered water or vinegar before handling the SCOBY.</b></p> <p><b>DO – Select glass, stainless steel or oak as a brewing vessel.</b></p> <p><b>DO – Brew with filtered water.</b></p> <p><b>DO – Brew with organic, fair trade sugar &amp; tea whenever possible.</b></p> <p><b>DO – Cover with a cotton cloth cover or coffee filter w/rubber band.</b></p> <p><b>DO – Select a shady, warm location w/good airflow.</b></p> <p><b>DO – Give the culture 7 days to ferment and develop.</b></p> <p><b>DO – Pull new starter liquid from the top of the previous batch.</b></p> <p><b>DO – Make a SCOBY Hotel.</b></p> <p><b>DO – Throw away any batch that gets mold.</b></p> | <p><b>DON'T – Use chlorine. It kills bacteria &amp; we ♥ the bacteria in our SCOBYs!</b></p> <p><b>DON'T – Use soap. See above.</b></p> <p><b>DON'T – Select plastic, crystal or leaded ceramic as a brewing vessel.</b></p> <p><b>DON'T – Brew with tap water.</b></p> <p><b>DON'T – Brew with stevia, raw honey or herbal teas.</b></p> <p><b>DON'T – Cover w/cheesecloth. The weave is too loose and will allow fruit flies to get in.</b></p> <p><b>DON'T – Store in direct sunlight, in a closed cupboard or in a cool location.</b></p> <p><b>DON'T – Disturb the vessel. Too much movement causes the culture to not form properly.</b></p> <p><b>DON'T – Pull new starter liquid from the bottom of the batch. Yeast will overpower your brew.</b></p> <p><b>DON'T – Store more than 1 or 2 extra SCOBYs in your brewing vessel. The brew will be vinegary.</b></p> <p><b>DON'T – Try to salvage a moldy batch.</b></p> |

## Tea and Kombucha

### What to Use and What to Avoid

Tea is THE MOST POPULAR beverage in the world. We drink more tea than all other beverages combined including soft drinks, coffee and alcohol. So, it makes perfect sense that one of the chief ingredients of Kombucha is tea.

But, what is tea? We hear about green tea, chamomile tea, peppermint tea, genmaicha, rooibos, honeybush and Lipton's tea to name a few. Perhaps any plant that is soaked in hot water to create a beverage can be called tea? It may seem that way, and for day-to-day conversation there's nothing wrong with that definition.

However, **many "teas" do not contain what Kombucha needs to brew successfully, especially over time.** Moreover, some plants may harm your culture and retard the formation of healthful elements in your homebrew.

Let's take a closer look at the best types of tea for long term brewing of Kombucha.

### What is tea?

The Latin name for the tea plant is *Camellia sinensis*. All types of tea – white, black, green, oolong, and post-fermented teas (such as pu-erh) etc. are derived from the same plant.

The different types are primarily determined by how they are processed.

Traditionally, Kombucha has been brewed with black tea (known as "red tea" in China, named for the color of the resulting brewed liquid rather than the color of the leaves themselves).

Research has shown that green tea produces the healthiest looking culture. The most common recipe for brewing Kombucha includes a combination of green & black tea.

Each type of tea has been shown to demonstrate specific healing properties which Kombucha's fermentation process helps to unlock. With Kombucha's help, the polyphenols & anti-oxidants become more bio-available, meaning they are easier for your body to absorb. Once again, Kombucha works with nature's own systems to improve their efficiency. Symbiosis defined.

## Why tea?

Tea contains several nutrients and compounds that feed the Kombucha culture. Along with the sugar, it is the main fuel source for the SCOBY. When you brew Kombucha with herbal infusions (also called tisanes), you may get a delicious, healthy fermented beverage, but over time, due to the lack of necessary nutrients, the culture will atrophy and eventually die.

That isn't to say that advanced brewers shouldn't make herbal "kombucha," but in order to protect the health of your culture it is recommended to either add some actual tea to your herbs or alternate batches with the tea plant to reinvigorate the culture. Beginners are advised to stick to tea until you have enough large healthy cultures in your SCOBY Hotel to brew experimental batches.

I have four criteria for purchasing tea: loose leaf, bulk, organic, Fair Trade (whenever possible). Loose leaf & bulk means less packaging (more green) and less expensive (more green). I make the personal choice to pay out some of those savings to select organic and Fair Trade. I value knowing that pesticides won't be passed on to me and that the laborers were paid a living wage for their work. The more often I make conscious choices, the more impact I have in creating an ethical global society.

Here is a short breakdown of the different types of tea that are included in my special Kombucha tea blend. I select each one for a combination of its healing properties and flavor profile.

## White Tea

Specifically, organic white peony tea (白牡丹茶). White tea is harvested from the youngest, most delicate buds & leaves which are covered in fine white hairs and located at the top of the tea plant.

Once picked, they are allowed to lightly wither in the sun and then are gently dried to prevent further enzymatic oxidation (meaning to turn darker from exposure to the air, kind of like an apple with a bite taken out of it).

This gentle drying process protects the delicate flavor of the tea and ensures that the highest amount of anti-oxidants are present in the beverage as well as the highest amount of caffeine.

White tea produces a milder tasting Kombucha that is high in catechins. Here are just some of the health benefits associated with drinking white tea (it's a pretty impressive list!):

- ✓ reduces atherosclerotic plaques
- ✓ reduces carcinogens and eliminates free radicals
- ✓ reduces risk of stroke, heart failure, cancer (including tumor formation), diabetes
- ✓ protects the skin from damage caused by UV light

## Black Tea

Black tea has a long history with Kombucha. As we learned in Chapter 2, the literal translation of the Chinese word for Kombucha – 紅茶菌 – is “red tea bacteria.”

Though it was once thought that black tea didn't contain nearly the benefits of green tea, it has been discovered that despite a longer oxidization process, it is very healthy.

Black tea is higher in purines which aid blood circulation and encourage warming properties. I blend in more black tea during the winter to compensate for cooler temperatures. Women especially may experience



poor circulation in their extremities and drinking Kombucha made with black tea can improve that condition.

Some other health benefits of black tea are:

- ✓ improves beneficial intestinal microflora
- ✓ provides immunity against intestinal disorders
- ✓ prevents tooth decay due to fluorine
- ✓ normalizes blood pressure

No wonder Kombucha has such a host of healing properties. It is made from a beverage that already has amazing health benefits.

Then Kombucha makes it easier for the body to absorb those benefits through the magic of fermentation and a little colony of special bacteria and yeast, which end up producing a bunch of vitamins and enzymes that weren't there before as well. Bonus!

## Green Tea

Green tea is unfermented and delicately processed using sunlight, heating & rolling, which releases its essence. It is rich in catechin polyphenols, particularly epigallocatechin gallate (EGCG).

Here are some of the healing properties attributed to EGCG:

- ✓ inhibits the growth of cancer cells without harming healthy tissue
- ✓ lowers LDL cholesterol levels
- ✓ naturally anti-bacterial
- ✓ boosts immunity

**Kombucha cultures LOVE green tea and grow thick, healthy SCOBYs.** According to Michael Roussin's research, green tea turns Kombucha more sour in a shorter period of time making it an ideal tea for those who prefer a shorter brewing cycle.

*\*\*Bonus Definition – flush – tea is harvested 2 times per year. Each harvest is called a flush. The leaves from the first flush in Spring have a different flavor and quality than those of the second flush in Summer. Some types of tea also have an Autumnal flush.*

## Pu-erh Tea

Pu-erh tea leaves are pressed into "cakes" and allowed to ferment in underground caves. It is a "living" tea due to the natural microbial activity from the fermentation process.

Pu-erh is a member of the tea family (*Camellia sinensis*). An ancient 1700-year old tea tree lives in the mountains of Yunnan, the province in China where Pu-erh County, the namesake of the tea, is located.

The locals have closely guarded their secrets in producing this highly prized tea that can range in price from a few dollars to thousands per ounce. It undergoes a special fermentation process which imbues specific healing properties i.e. lowering cholesterol and aiding weight loss. It is known as a "living" tea because the natural microbes present on the tea leaves at the time of picking are allowed to ferment the leaves in what is known as post-fermentation.

Located on the "茶馬古道" (Chámǎ Gǔdào – tea horse ancient road), which served as an export road for horses from Tibet to China and tea from China to the Tibetans, Indians & beyond, Pu-erh County was a key stop along the path. Tibetans had little to no vegetables in their diet and the nutrients from the tea, which they soak in butter and drink to this day, helped fill that nutrition gap.

The road took traders through treacherous terrain, crossing deep gorges on rope bridges and was seldom undertaken alone. Several outposts cropped up along the way to service the traders. The 茶馬古道 was at its height in the Song Dynasty (宋朝 960-1279) when 2000 or more travelers a day would carry over 7500 tons of tea out of China. Quite an amazing feat when you consider they did all this on foot! Besides tea, culture and Buddhism also spread in both directions thus influencing the philosophical development of future generations of Chinese thinkers.

The process to creating the finest pu-erh tea is shrouded in mystery. To this day, many of the famous pu-erh tea plantations closely guard their techniques for cultivating this uniquely fermented tea. One legend states that monks took to burying their tea cakes to prevent them from being stolen by marauders. When they came back to uncover the tea, they discovered that it had undergone a transformation into what we now know as pu-erh tea. It was often pressed into lucky shapes such as melons, mushrooms or in the shape of coins which made it easy to use as currency. To this day, decades old pu-erhs are highly prized and treated as investments similar to investing in fine French wines of a particular year.

The flavor of pu-erh tea is much more mild and fragrant than its appearance would seem to suggest. The first time I tried it, I was expecting a more robust flavor but was pleasantly surprised by its natural sweetness. Add some pu-erh to your tea blend to increase the body's ability to deal with fatty foods, lower cholesterol and to help lose weight.

In China, pu-erh is considered a medicinal tea and only drunk when required by one's physical state of health. This makes it a great companion to the Kombucha's natural healing properties.

## **YERBA MATE**

I first discovered Yerba Mate when David Karr, one of the founders of Guayaki shared with me the ritual of the gourd. I walked up to the booth and though the place was packed with curious restauranters eager to gobble up or gulp any sample set before them, David spotted a kindred soul (I'm sure of it!) and passed on the ritual of drinking yerba mate.

Yerba is the Argentinian variant for the Spanish word "hierba" meaning grass or herb. Mate comes from the Quechuan word for the gourd out of which the yerba is drunk, mati; literally, "herb cup." Now, I share this gift with you!

The ritual starts when the cerbador (server) prepares the yerba mate to be drunk. First, a portion of dried stems and leaves are added to the gourd

with some cold water to protect the nutrients and prevent scalding. When the mate has absorbed the water, then hot water (not boiling) is poured in the gourd. The cerbador will usually drink the first 1-2 rounds of "washings" to make sure the temperature is right and that it is running smoothly. Plus it gives them the energy to play host!

Then, the mate is offered to each friend with the bombilla (metal straw) facing the recipient. The cerbador looks the recipient in the eyes as they exchange the gourd. Only when the drinker has had their fill of mate will they then say gracias (thank you.) After each mate has been drunk, the cerbador adds a fresh supply of hot water and shares it with the next in the circle of friends. The mate can be brewed several times, making it ideal for sharing with others. As they say, "We share the gourd, not the beverage."

I was immediately taken with this ritual. It is so much about building community and connecting to others in a positive and sharing way. Friends gather to enjoy the mate and conversate about all manner of topics – a habit many people have lost thanks to the boob tube. There is an additional bonus to this communal sharing of the bombilla and mate; inoculation due to shared saliva. Basically, by swapping spit with friends, each person is inoculated to different viruses thereby building immunity. In our germophobic society, that might seem gross, but it is theorized that even kissing developed in order to spread germs and boost immunity.

My favorite part of this ceremony is when you look into each other's eyes. So often these days, people avoid direct eye contact. Part of building community, is also building a safe place for that community to exist. Looking each other in the eye, sharing the same gourd and engaging in stimulating conversation is the perfect way to expand your circle of trust.

Yerba mate's benefits extend beyond the ritual to the plant itself. *Ilex paraguariensis*, the Latin name for Yerba Mate, is a species of holly tree native to subtropical South America in northeastern Argentina, Bolivia, Uruguay, Paraguay and southern Brazil. Mate has as much caffeine as coffee but its nutritional profile offsets the typical crash experienced by most coffee drinkers. The energy is focused without jitters nor the caffeine

crash of coffee.

According to a study at the University of Illinois – Champaign Urbana (quick fact – my alma mater!), “Yerba maté tea-based beverages contained the largest antioxidant and poly-phenol content among tea-based and non-tea-based drink in a recent study published in the Comprehensive Reviews in Food Science and Food Safety. This contributes to the functionality of the beverage, which has been shown to include anti-inflammatory and low-density lipoprotein (LDL) cholesterol-lowering properties that help aid in the prevention of diabetes and heart disease.”

I include Yerba Mate into Hannah’s Special Blend because I like the slightly smoky flavor and increased energy boost that it provides. Experiment for yourself and see!

## ROOIBOS

Pronounced “roy-boss”, Rooibos (literally “red bush” in Afrikaans) has been popular for generations in its native Southern Africa. The plant is used to make an herbal tisane called rooibos tea, bush tea, red bush tea, South African red tea, or red tea.

Naturally free from caffeine and having a pleasantly sweet taste has boosted its popularity worldwide. It is also purported to help calm colicky babies and soothe skin afflictions when applied topically.

Traditionally drunk by the Khoikhoi people of the South African Bush, this red bush herbal infusion nearly faded into extinction due to the dwindling tribe and environmental factors. In the late 18th century, botanist Carl Thunberg re-discovered it, but it wasn’t until the early 20th century when Benjamin Ginsburg developed a method for fermenting the leaves similar to the traditional process for fermenting (or as we know from the previous post “oxidization”) Keemun tea from China.

I enjoy the deep, smoky flavor of Rooibos in my Kombucha, but I use it sparingly in combination with other teas, otherwise, I find that the flavor



may be too overpowering. In Hannah's Special Blend, it gives a hint of sweetness and depth. Its pretty red leaves glint among the green, black and white of the other teas.

All of these teas and tisanes, in their seemingly unlimited varieties, have been shown to make healthy, delicious Kombucha and SCOBYs. Mix them and match them for a flavor combination you enjoy.

However, there are some teas to be avoided when making Kombucha.

## Teas to Avoid

- ☹️ **Flavored teas such as Red Zinger or Chai** – these are often flavored using essential oils that may damage the culture. There are varying opinions about Earl Gray as it contains oil of bergamot but several people have brewed Kombucha with it successfully. You may not want to use it as your main tea but it adds nice flavor and body.
- ☹️ **Herbal infusions** – as mentioned previously, these do not technically contain any *Camellia sinensis*. Some herbal infusions with high levels of volatile oils will retard the culture's growth as they have a bacteriacidal effect (kill bacteria).
- ☹️ **Strongly smokey teas such as Lapsang Souchong** – while they won't technically damage the Kombucha, the flavor is considered a poor match by most brewers.

Of course, now that I said don't use these teas, everyone will want to use these teas and the comments will fill with people who have used them successfully.

That's one of the beautiful things about Kombucha: **Experimentation!**

Although Kombucha thrives best in a nutrient solution of straight tea and sugar, the advanced brewer is highly encouraged to experiment by using



other herbal infusions to ferment the culture.

One of the many benefits to this type of experimentation is that you receive far great health benefits from herbs that have been “pre-digested” through the fermentation process with the Kombucha culture.

Basically, Kombucha grabs the healthful elements (polyphenols, sterols, anti-oxidants, etc) and starts breaking them down into a form that is more bio-available; that is, easier for the human body to absorb and make use of immediately.

**Try these types of experiments once you have a stash of back-up cultures in your SCOBY Hotel.**

## Kombucha & Caffeine Explained

Caffeine, often called America's favorite drug, can have negative effects on the body and the nervous system. Yet significant amounts of this pharmacological agent occur naturally in the 2 most popular beverages in the world (besides water), tea and coffee. Large doses are added to soft drinks and even bottled water.

Like many good, naturally occurring substances found in nature, commercial production has perverted our relationship with caffeine, leaving us addicted or scared or both.

It is my opinion that because caffeine is present in these plants in the natural world (it acts as a natural pesticide), and we have been drawn to consume this substance for all of recorded history, it must provide something of benefit to our bodies beyond simple alertness.

While the health benefits of tea have been well documented, science is still debating caffeine's health benefits, including the potential to prevent Alzheimer's and Parkinson's, and we have certainly seen study after study that contradict what came before. Many sources I respect warn against any caffeine consumption but I still believe that, in moderate amounts and when consumed as a whole food, most naturally occurring substances are harmless to beneficial.

As Kombucha is made from tea (*Camellia sinensis*), it contains caffeine. However, the amount of caffeine present in a glass of Kombucha will vary widely, as should be expected. After all, Kombucha recipes vary endlessly and several factors such as type/quality of tea, steep time and fermentation cycle & temperature must be accounted for.

Still it is clear that properly fermented Kombucha contains only small amounts of caffeine and, even more importantly, we can control the amount of caffeine present through some very simple choices and techniques. Perhaps most exciting is learning that the caffeine present in Kombucha is

paired with a natural amino acid that slows its absorption into the bloodstream, l-theanine, with great side benefits.

## **What is caffeine?**

Caffeine (C<sub>8</sub>H<sub>10</sub>N<sub>4</sub>O<sub>2</sub>) ...was first isolated by the German chemist Friedrich Ferdinand Runge in 1819 (and)...In humans, it stimulates the central nervous system, heart rate, and respiration, has psychotropic (mood altering) properties, and acts as a mild diuretic...A normal dose of caffeine is generally considered to be 100 mg, which is roughly the amount found in a cup of coffee.

However, more than half of all American adults consume more than 300 mg of caffeine every day, which makes it America's most popular drug.

## **L-Theanine: Tea's Relaxation Effect**

An important distinction has been made between caffeine in tea and caffeine in coffee. Tea has been observed to create a calming effect on the drinker, as opposed to coffee which tends to raise anxiety. These contradictions piqued the interest of researchers who have been studying caffeine's effects on the body for over 100 years.

Studies have found that tea contains an anxiety reducer called l-theanine which acts "antagonistically against the stimulatory effects of caffeine," producing a calming effect 30-40 minutes after ingestion.

It does this by stimulating alpha brainwaves, which calms the mind in a way similar to meditation, and by ticking up the body's production of dopamine and serotonin (yes please), resulting in improved memory and learning ability in addition to relaxation.

Further studies show that when taken together l-theanine and caffeine improved "cognitive performance and mood." It is also speculated that polyphenols present in the tea not only deliver health benefits but mitigate negative effects that caffeine may have when consumed alone.

## How Much Caffeine Is In A Glass Of Kombucha?

Kombucha is generally considered to have about  $\frac{1}{3}$  the amount of caffeine as the tea it is made with, so for example black tea, which might have 30-80mg of caffeine per cup may yield a glass of Kombucha with 10-25mg of caffeine. Green tea Kombucha might have just 2-3mg of caffeine. The range is extremely broad!

## Can I Make Decaffeinated Kombucha?

For most healthy people, the small amounts of caffeine in Kombucha are no problem and may provide benefits.

If you fall into the category of those most sensitive to caffeine, there are simple ways to control, reduce and even eliminate the caffeine in your Kombucha.

However, you should avoid most store bought decaffeinated teas as they have been treated with a chemical process (even "naturally decaffeinated" ones) which leaves them damaged and covered in toxic residues.

## Types of Sugar for Brewing Kombucha

Sugar is truly a wondrous, misunderstood building block of life. It is nature's gasoline: real, honest and pure energy, and when delivered in an easily digestible form, incredibly efficient!

Sugar is one of the main ingredients in brewing Kombucha Tea. These days, we are hyper-aware of sugar and consider it to be "bad." However, as you know from drinking Kombucha, the sugar is clearly not for YOU but rather it is a fuel source for the SCOBY.

One thing I have noticed is that as my Kombucha consumption became more regular, my sugar cravings have decreased. At the same time, the "sour" taste of the Booch has dissipated and became more natural to my palate.

This is because Kombucha gradually alkalizes the body. These days, my sugar cravings are entirely mental. Once I have dessert in front of me, I rarely eat more than a few bites. The spirit is willing, but the flesh is \*strong\* and doesn't want anything to do with that insulin spike. This is one of the greatest Kombucha benefits I have experienced.

That is why misgivings about Kombucha and sugar are mostly misguided. Without the sugar, there is no fermentation, and without fermentation, there's no good stuff to feed your body.

According to Wikipedia, sugar is a term for a class of...

*"...edible crystalline carbohydrates, mainly sucrose, lactose, and fructose characterized by a sweet flavor. In food, sugar almost exclusively refers to sucrose, which primarily comes from sugar cane and sugar beet. Other sugars are used in industrial food preparation, but are usually known by more specific names—glucose, fructose or fruit sugar, high fructose corn syrup, etc."*

## CANE SUGAR

Cane sugar is the most common type of sugar that is used for brewing Kombucha. Most people use "plain white sugar" – you want to make sure the package says "cane sugar" on it or you are most likely using GMO Beet Sugar.

Cane sugar has been used by humans for over 5000 years. It is most likely what has been used to feed Kombucha cultures for centuries!

That is why it is the best food for your SCOBY. The yeast easily converts the sugar into alcohol (step 1 of the fermentation process).

I always use organic, evaporated cane juice in order to avoid adding harmful chemicals from the bleaching process to my brew. I source mine

from my local co-op in bulk. That being said, thousands of people use plain old white sugar to make their Kombucha.

Evaporated Cane Juice and brown sugar have higher levels of calcium, magnesium, potassium and iron. These healthful elements are passed on to the Kombucha drinker.

***BONUS FACTOID:*** *Sugar cane originated in India and the English word for sugar comes via Arabic سكر sukkar from Sanskrit शर्करा sharkara.*

## MOLASSES

Molasses is a by-product of sugar cane processing. It contains more iron, calcium, potassium and magnesium than table sugar.

It may take the SCOBY a bit longer to break down the components of molasses before it gets to the sucrose, but the resultant brew will contain the extra minerals.

*Molasses is high in iron*

It can be substituted for sugar in a 1:1 ratio.

## HONEY

YES! You can use honey to brew Kombucha. However, if you want to use raw honey, do it as an experimental batch with a SCOBY from your hotel as it does contain its own colony of bacteria that could adversely affect the culture over time.

To use honey, substitute 7/8 of a cup of honey for every 1 cup of sugar.

## AGAVE

Agave is a natural sweetener that has recently risen in popularity.



It is possible to use agave in the Kombucha brewing process.

It may yield a more sour brew so you could cut it to 1/2 cup of agave syrup per gallon batch.

## STEVIA & XYLITOL

Stevia and Xylitol are plant based sugars and as such are **NOT FERMENTABLE**. They are not recommended to use in Kombucha brewing. The only batches I made with stevia ended up with mold. If you have had a different experience with stevia, I'd love to hear about it!

### Other Sugars to Avoid

- ☹️ **Lactose** – Kombucha is not lacto-fermentable.
- ☹️ **High Fructose Corn Syrup** -Must I explain? Your body can't even break this stuff down.
- ☹️ **Any Artificial Sweetener** – I have heard some crazy ideas: Erithritol, Aspartame, Sucralose, Saccharin?! Someone asked if they can use Mountain Dew as starter. No. No you cannot.

**BONUS FACTOID:** *High Fructose Corn Syrup caused a higher incidence of obesity and metabolic diseases in rats than sugar (sucrose) in [a study done by Princeton](#).*

## What Do I Use?

As I've mentioned before, I use organic, evaporated cane juice. That is the type of sugar included in my kits. Again, the sugar is NOT FOR YOU!! You might think that you are helping yourself by not adding all of the sugar the recipe calls for, in fact you are starving your culture.

There are lots of other types of sweeteners not listed here that can be used in brewing Kombucha – brown rice syrup, glucose, sorbital, etc.

## Sugar FAQ

### Do I have to use sugar? I never consume sugar so it puts me off Kombucha. Why so much sugar?

I completely understand the aversion to sugar. However, the sugar in Kombucha is for the culture to consume, not for you.

When done fermenting, there will be about 1-2 grams per 8 ounce glass of unflavored Kombucha. By contrast, an 8 ounce glass of orange juice has about 24g of sugar. Even natural carrot juices have 13g per 8 ounces. If fermented longer, say for 2 weeks, sugar levels in Kombucha are even lower - *Recommended for diabetics and others with low sugar tolerance.*

### Why does Kombucha need so much sugar?

Without sugar, Kombucha cannot ferment. Sucrose is the most easy to digest by the yeasts; they consume the sugar and put out CO<sub>2</sub> (carbon dioxide, i.e. the bubbles in your booch) & ethanol (alcohol). Which is nice.

***BONUS FACTOID:*** Then, as part of the symbiosis, the bacteria consume the ethanol and express the healthy amino acids, trace vitamins and minerals.

### Do I have to add all of the sugar?

Yes. The recipe is 1 cup per gallon. Too little inhibits the brew's normal development; no SCOBY, no acetic acid. Too much and the yeasts either:

- a. "flush" and overrun the bacteria  
or
- b. fall completely asleep and do nothing.

Can multiple types of sugar be combined into one Kombucha brew? Absolutely! Just as with tea blends, sugar blends can add flavor and depth to your brew. Have fun and experiment!

## **Organic? Fair Trade? Do these things matter?**

Not to the Kombucha. Only to me. I make these (slightly more expensive) choices for my physical and mental health. However, no one should ever put off brewing Kombucha for fear of expense. Lipton tea bags and plain white sugar will get the job done just fine.

## **What if I forget to add the sugar? Can I add it after without harming the SCOBY?**

Yes. If it has only been a few hours to a day, remove the SCOBY, add the sugar to the brew, stir and then return the SCOBY to your vessel. The sugar will be consumed by the yeast eventually, but the process may take a few extra days.

## **The science is confusing. What are fructose, sucrose & glucose?**

- Sucrose ( $C_{12}H_{22}O_{11}$ ) = Regular Table Sugar = Fructose + Glucose
- Fructose ( $C_6H_{12}O_6$ ) = Natural Fruit Sugar
- Glucose ( $C_6H_{12}O_6$ ) = The most commonly used energy source in the biological world. Also known as dextrose.

Kombucha fermentation breaks down sucrose into fructose and glucose which feed the yeast which feeds the bacteria which feeds you. Awesome!

## **Is there a way to test how much sugar is left in my brew?**

Sure you can use a hydrometer to measure both the sugar and the alcohol content of your brew.

Or, if you want something a bit easier, you can try an Accuvin residual sugar test.

## CHAPTER 8: MANAGING THE BREW

### I'm Leaving Town. What to do with my Continuous Brew?

Not sure what to do with your Continuous Brew? You have 3 options.

- ✓ **Do nothing.** When you return, taste your Kombucha and decide if it's still drinkable. If not, drain some off and add sweet tea to refill. Allow 1-4 days for your system to "brew and recover." The older the KT inside, the faster the fresh brew will be complete.

Or...

- ✓ **Before leaving, bottle your Kombucha and preserve it for later.** Leave about 33% in the brewer, filling bottles with the rest (flavoring optional). The liquid remaining in the brewer will ferment while you are away and be ready to use as powerful starter for the new batch when you return. The sweet tea recipe is always the same ratio, just adjust according to the volume needed to refill the brewer.

Or...

- ✓ **If you will be gone between 1-2 weeks,** you could drain nearly the entire brewer, leaving 1/2 a gallon of Mature KT and the SCOBY inside, then brew a fresh batch that will be ready when you return. Typically a Continuous Brew requires between 10-14 days to reach full maturity.

This is one of my favorite things about Continuous Brew. It is so flexible and convenient for busy people who have trouble maintaining a consistent brewing schedule.

No matter how sour that Kombucha is in your brewer, you are never more than a few days away from a full batch of perfectly balanced Kombucha. How awesome is that?

## Taking Bottled Kombucha on Vacation

If you've got a road trip planned for Summer vacation (or the holiday season, or Spring Break, or...), here's how to bring the booch along:

### The Right Bottle

- ✓ **Best:** Swing Top Bottles
- ✓ **Good:** Reused commercial Kombucha or juice bottles (no metal lids)
- ✓ **Tip:** Always keep them upright! Kombucha is slippery and will leak.

### Pack It Smart

Pack your bottles in a cooler, no ice needed. A strong cardboard box could be used.

Should an incident occur (i.e. explosion, leak), it will be contained to one area and clean up will be a breeze. Store upright for best results.

### Burp the Booch

Check on your bottles from time to time to make sure that none of them are leaking. To prevent the buildup of too much CO<sub>2</sub>, burp your bottles; that is, open the top to release the air pressure.

*Check out chapter 6 for more on burping bottles for safety.*

## Batch Brewing: Going Away or Taking A Break

Got a long trip planned? Or perhaps just taking a break from brewing? Storing your SCOBYs or bottled booch is easy and safe, no fridge required.

As long as a SCOBY is covered in mature Kombucha or sweet tea solution (which it will turn into Kombucha), it will be happy. A cloth cover or a lid are both fine but avoid metal lids that could rust and contaminate the culture.

Just leave the culture hanging out in enough liquid so that when you come home it isn't all dried out. A fresh batch could be brewed and left to ferment. It is safe to brew KT for as long a cycle as you like.

If the flavor isn't to your liking when you return, use it as hair tonic, facial toner, cleaning fluid or vinegar for salad dressing. Or just super powerful starter for your next batch brew.

## Just Say No: To the Fridge



Again, NEVER PUT YOUR KOMBUCHA CULTURE IN THE FRIDGE! Yes, I put that in all caps so I'd be sure that you saw it. I know, we are totally conditioned to put things in the fridge so that they don't go bad. Let me tell you a little secret about Kombucha: It NEVER goes bad.

*Keep your culture out of the fridge.*

Because of its naturally low pH, it has an antimicrobial barrier that protects it from being invaded by harmful pathogens.

There is only one stage with greater potential for contamination and that is within the first few days the brewing cycle before the pH drops to 3.0.

When placed in the fridge, bacteria and yeast slow down, eventually hibernating completely. Depending on how long they sleep, reviving them is difficult. Initial brews from these zombie SCOBYs are lifeless and sour. Weeks or months of wasted brews may be required to recover. Instead, leave SCOBYs at room temperature, allowing your colony to thrive.

## Beginner's Techniques to Increase Carbonation

One of the most common questions homebrewers have is how to get more carbonation (i.e. fun bubbles) in their Kombucha. Yes, bubbles are fun, and there is something inherently exciting about seeing a fizzy glass of iced Kombucha froth over the edge as you pour.

Bubbles add flavor and texture, scientists say. It emphasizes the "living" energy of the drink, and because it's natural, it feels and tastes different



than CO<sub>2</sub> that is added. Let's get the basics down before we dive into the solutions.

## **What is Carbonation?**

When CO<sub>2</sub> (Carbon Dioxide) dissolves into a liquid and is kept under some pressure, carbonation results. When that pressure is released, so are the bubbles, and that brings the lip tickles.

## **What causes Carbonation?**

As always, there are the natural and the man-made versions. "Forced carbonation" involves mechanically adding Carbon Dioxide while a liquid is under pressure. Natural carbonation requires only the magic of fermentation and a closed container.

But wait! Kombucha is fermented in an open container, uses a cloth cover and requires air circulation. How can CO<sub>2</sub> build up? The answer is your SCOBY. As it grows on top, it makes an airtight seal to the sides of the brewing vessel, trapping the newly created gasses inside.

Have you noticed your SCOBY developing a lot of holes or bumps? If so, that is the CO<sub>2</sub> (and other gasses) trying to escape. Totally normal.

## **Kombucha Carbonation: What to Expect?**

So why isn't your Kombucha bubbly? Let's talk about expectations.

Most people have experienced carbonation in two forms: soft drinks and beer.

In both cases, almost all the products sold on shelves undergo what is called a forced carbonation process, where CO<sub>2</sub> is literally forced into the beverage and kept under pressure to maintain the effect.

Beer is usually somewhat naturally carbonated but rarely goes to shelf

without a boost, usually of the forced carb variety. Modern day commercial sodas have zero natural carbonation, and anyone who has ever accidentally sipped a flat soda knows they are undrinkable without bubbles.

What's important is that in both cases, the carbonation produces artificial bubbling when poured, and if you pay closer attention, you will be able to tell the difference.

Artificial bubbles tend to be more uniform, stick to the side of the glass and do not tend to "interlace" each other.

They also dissipate more quickly, are more "aggressive" in the mouth and have a much "harder" taste to them.

Natural carbonation, even when it causes the bottle to explode on opening, delivers softer bubbles that tickle rather than burn and look a little more soap-like.

All this is to say that when some complain about their homebrew not being "fizzy enough," it may just be a matter of perspective. When I pour a glass, sometimes it fizzes up and sometimes it just bubbles along the side of the glass.

A little carbonation can go a long way, especially if one is not expecting their Kombucha to look like a Coke when it's poured.

Try being more sensitive to the bubbles that are present and you may find your Kombucha is plenty carbonated just as it is.

### **But I Want More Carbonation! Help!**

Okay, okay. I've given you the background info and warned you to really be present with your Kombucha and think about if the bubbles are already doing what they are supposed to do. Now it's time for the tips.

These tips are the easy ways to get carbonation, so I'm labeling them as

“Beginner.” The truth is, **these are the only techniques I use on a regular basis.** More “Advanced” techniques for increasing carbonation are in the next section. Again, any brewing level can attempt any of these tricks, but the advanced level ones require a more adventurous brewer.

## Secondary Fermentation

The easiest ways to get additional bubbles are during the bottling process. Whether you are using the Batch Brew method or the Continuous Brew method, you must bottle your booch to make it effervescent. During this bottling period, the beverage will undergo a period called “secondary fermentation.”

Depending on the conditions, either a little or a lot of fizz will be created, and you may even have an exploding (yes exploding!) bottle problem on your hand if you don’t monitor them well! As part of this stage, there are 3 tricks to employ. You can use one, 2 or all 3 techniques.

The common requirement for all of these methods is: You must have a tight cap for your bottles. Reusable bottles are GREAT, but often the caps do not hold bubbles in well.

If you are still unable to get the fizz you want after trying these techniques, try better bottles. You can look for Italian made locking swing top bottles or buy a few Grolsch, enjoy the beer and then reuse those.

- A. **Fill Your Bottles Completely** – Like all the way to the top, leaving just a centimeter or two of space. By reducing the amount of oxygen present in the bottle, more Carbon Dioxide is dissolved into the Kombucha. This stage is also known as the anaerobic fermentation stage, meaning “without air.”

In your Continuous Brew or Batch Brew, the fermentation was aerobic (although, under the SCOBY there’s a bit of anaerobic happening also, but I digress). Now we are starving the liquid of oxygen, which induces a different type of action among the yeast and bacteria, which

then produces more bubbles, among other things.

- B. **Add A Little Sugar** – What? Sugar? Yes! Sugar is what sparks yeast the most, and the yeast are responsible for the bubbles. You can use a 1/2 teaspoon of plain white sugar per 12oz bottle, and that's what many beers do to create carbonation, but Kombucha mixes much more symbiotically with pieces of or pureed fruit and juice or other natural sugar sources, and the resulting bubbles can be quite explosive. Frozen, fresh or dried fruit all work well and spark both the flavor and fizz of many of my favorite recipes.

Another fine choice is fresh ginger, cut into centimeter sized blocks or grated (freeze first to make this easier). Of course fresh ginger is extremely healthful, goes great with lemon juice or any fruit and tends to produce a spicy, more aggressive fizz. 8-10 very small pieces is what I use for a quart sized container, but find your own taste preference. You will see that the Kombucha literally sucks all the life out of these little pieces of organic material, usually leaving them blanched of color and limp.

***Bonus Tip:** The most powerful fizz inducer might be Strawberry Puree! My advice: open over the sink.*

- C. **Leave Them Out of the Fridge** – Once you've got that Kombucha all bottled up tight with very little air (flavorings optional), it's time to sock it away somewhere dark and warm if possible. We are no longer concerned with airflow. In fact, the less the better, so in a cupboard or any other enclosed space is just fine; avoid sunlight. How long you leave them out is up to you.

The more flavorings you have added, the more closely you need to monitor your bottles, potentially burping them to prevent an accident. Give them at least 2-3 days, then you can move them to cold storage if you like. Mine rarely go into the fridge and continue to ferment in the bottle. I enjoy the deep flavoring.

Those are the basics. Tried these and still not getting any fizz? The following Advanced Techniques may require changing your brewing style. They aren't difficult but require attention to detail to monitor your progress.

## Advanced Techniques to Increase Carbonation

These methods are intended for the more experienced Kombucha brewer and even then only for those who have extra cultures to experiment with. Use one method at a time to experience how each works and to avoid over yeasting your brew.

First though, to understand what we want to accomplish, let's take the opportunity to more deeply explore the yeast/bacteria symbiotic relationship.

### The Yeast/Bacteria Relationship

The bacteria and yeast in the starter culture work in symbiosis to transform tea and sugar into fermented Kombucha tea. The yeast consume the sugar and create ethanol (alcohol) and carbon dioxide (our fizz factor!), then the bacteria consume the ethanol and convert it into healthy amino acids.

The balance between the yeast and bacteria can be a delicate one. If there is too much yeast in the brew, it can cause the bacteria to struggle; the other way around and your brew has little to no fizz. As always in life, strive for the ideal balance for optimum results.

Symptoms of an **unbalanced Kombucha brew** that may need a yeast boost:

- ☹️ Kombucha sours slowly or takes too long to reach the desired tartness
- ☹️ Little SCOBY growth
- ☹️ Lack of carbonation

### What is Yeast?

Yeasts are single celled organisms that have been used in baking and fermentation for thousands of years. They belong to the kingdom Fungi

(see chapter 2 for a full explanation).

Each Kombucha culture has its own variety of bacteria and yeast; though all of them will have acetobacter and saccharomyces, the exact composition may vary.

Some of the common strains of yeast in the culture include:

Saccharomyces ludwigii, Saccharomyces apiculatus, Schizosaccharomyces pombe, Zygosaccharomyces & Saccharomyces cerevisiae.

**Bonus Factoid:** "Saccharomyces" derives from Latinized Greek – saccharo- "sugar-" and myces "fungus". Cerevisiae is from Latin and means "of beer." Cerveza anyone?

The yeast are the brown strands or strings that you find floating attached to the culture or collecting at the bottom of the jar. They thrive at lukewarm to mildly warm temperatures, which is why the tea solution must cool prior to adding the culture. Too hot and they die off. Yeast release CO<sub>2</sub> and ethanol. It is the CO<sub>2</sub> that causes bread to rise and gives beer and Kombucha natural fizz. Roll up your sleeves and let's go yeasting!

**Warning:** Remember, Kombucha bottles may explode if left unattended. Kombucha CO<sub>2</sub> can build up quickly, especially with these techniques. Bottles must be monitored and burped, and it is recommended that one takes extra care when using these techniques as the increase in yeast activity can be significant. Store your secondary ferment bottles in a cooler, box or small enclosed cupboard to prevent damage.

## Yeast Manipulation Techniques for Increasing Carbonation

### A. Take Starter Liquid From the Bottom

Yeast is distributed throughout the Kombucha, whether visible or not. Once the yeast have done their job, they collect at the bottom of the brewing vessel and may join together, forming the brown strings you see in the photo.

Normally, in order to preserve a healthy balance of bacteria & yeast, the



starter liquid is pulled from the top. This ensures that we don't over yeast the brew (a lesson I learned the hard way).

On the other hand, if we are looking to boost our yeast quotient, the best place to find them is hanging out towards the bottom.

1. Pull 2 cups yeastie starter liquid from the bottom of the brewing vessel.
2. Use 1 less cup of water when brewing to accommodate the extra starter liquid. Add the extra yeastie starter last (as usual).
3. Cover and if possible place near a source of warmth (heating mat, warm stove, in a crock pot on low, etc) to keep the yeast active.

*\*\*More carbonation should appear within 1-2 brewing cycles.*

## **B. Increase the Amount of Tea**

The additional caffeine present in the tea will stimulate yeast rather than allowing them to take their normal rest cycle. Add an extra teaspoon or two (1-2 tea bags) of green or black tea to achieve the desired result.

Green tea has been noted for its ability to boost carbonation but my experience has shown me that the culture prefers a variety of teas to thrive – so don't be afraid to mix it up.

## **C. 2-Stage Fermentation**

This technique is described by [Len Porzio of Kombucha Balance](#). I have never tried this method because I go with the flow – sometimes my brew is super bubbly and other times it is more flat and I'm cool with that.

Len is a muy respected Kombuchero, so let's see how his method works:

1. Filter the fermented KT with a cheesecloth into a plastic bottle (a 2 Liter soda bottle works great for this) – you don't want to prevent all of the yeast from getting through, this is just to remove the ooglies.
2. Fill the 2-liter bottle all way to the rim with the KT.
3. Gently squeeze the bottle to remove excess air before capping.

4. Allow the bottles to remain at room temperature.
5. Check the amount of carbon dioxide pressure building up by squeezing the bottle. You want it to feel hard, like a basketball. This process usually takes 1-2 days but may take longer if yeasts are lacking.
6. Once your bottles are hard, transfer them to the fridge to deactivate the yeast (go dormant) and reduce the amount of pressure that has built up.
7. After a couple of days in the fridge, gently pour the liquid into glass bottles. You should notice fizzy bubbles as you pour, but do not pour so fast that it froths in the bottle.
8. Take care not to allow the spent yeast that has collected on the bottom to enter the bottles. Discard the spent yeast.

**Len sez:** *"Don't Forget to fill your bottles up to the rim & sample your brew when pouring from plastic to glass- if too tart, add some sugar or agave to mellow the flavor."*

#### **D. Preventing the Crabtree Effect**

The Crabtree Effect is not an overpriced soap store or a bad 70's action picture. In fact, The Crabtree Effect is a normal part of the Kombucha brewing process. It occurs when an excess amount of glucose (sugar) is introduced too quickly to the yeast.

Much like a typical family after Thanksgiving dinner, the yeast fall into a "food coma" and stop reproducing. Usually, this is great as it allows the bacteria to kick into gear and maintain balance. However, if we want the yeast to keep working (and creating more bubbles), we need to prevent The Crabtree Effect from occurring.

To prevent your yeast from passing out on the job, gradually add the normal amount of sugar over the course of three days. This allows the yeast the chance to keep up with the amount of glucose present in the nutrient solution.

Measurements based on 1 cup of sugar per gallon of nutrient solution, scale to fit your needs:

- Day 1, add 15% of the sugar = 2-1/2 tablespoons
- Day 2, add 30% = 1/3 cup
- Day 3, add the remaining 55% = 1/2 cup + 1 tablespoon

Now you've got loads of tips and tricks to try next time you are feeling like your brew is falling flat.

## Fruit Fly Infestation

Fruit flies may become a problem. They are also known as vinegar flies and they LOVE Kombucha.

They love it so much that you can make an easy fruit fly trap using KT.

### How to Make a Fruit Fly Trap

1. **Add some mature KT** to a dish
  2. **Add a drop of soap**
  3. **Place near** your brewing vessel
  4. **Watch fruit flies fall in** and not fly out!
- ✓ The change in surface tension caused by the soap prevents them from escaping the KT bath.

## Kombucha Mold

Mold! Argggghhhhh! The word alone strikes terror into the heart of any newbie Kombucha brewer.

Yet this fear is mostly unfounded as moldy Kombucha is extremely rare. In 8 years of brewing, I have encountered it only ONCE.

It was plainly obvious and, yes, disheartening for a moment. Nobody likes to fail and the sight of that fuzzy blue mess was intimidating. Yeck.

If there is one mold warning I urge you to take seriously, it's this one:

**☹️ NEVER ATTEMPT TO SALVAGE A MOLDY CULTURE.**

If you have determined it is contaminated, THROW IT AWAY. Start over with a new one, and employ the tips below to avoid mold in the future.

However, before throwing that culture away, make sure it is mold. Oftentimes a newbie will mistake normal SCOBY formation or a stray tea leaf lodged in the SCOBY as mold. Feeling frustrated, they destroy a perfectly good culture out of ignorance.

To avoid such a tragedy, lean down and take a closer look at MOLD (but don't inhale!)

### What is mold?

*"Molds (or moulds) are fungi that grow in the form of multicellular filaments called hyphae. In contrast, microscopic fungi that grow as single cells are called yeasts. A connected network of these tubular branching hyphae has multiple, genetically identical nuclei and is considered a single organism, referred to as a colony.*

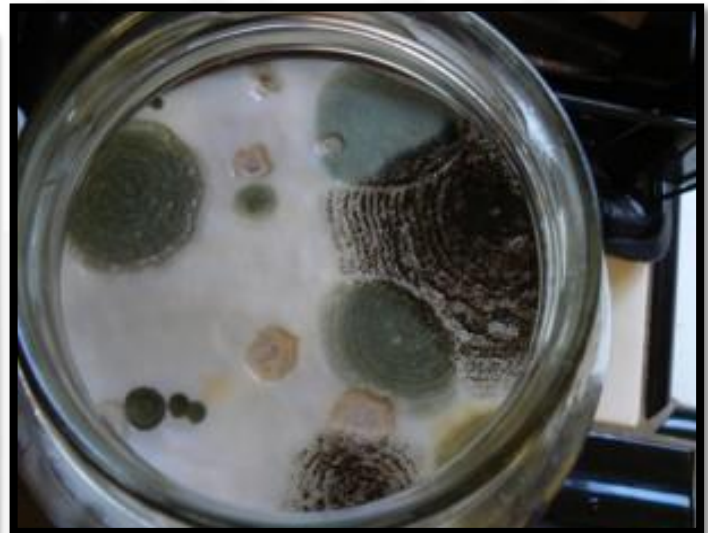
*Molds do not form a specific taxonomic or phylogenetic grouping, but can be found in the divisions Zygomycota, Deuteromycota and Ascomycota. Some molds cause disease or food spoilage, others play an important role in biodegradation or in the production*

*of various foods, beverages, antibiotics and enzymes."*

~[Wikipedia](#)

Obviously then, Kombucha is somewhat related to mold. Single cell mold is called yeast, which of course is the "Y" in SCOBY. A literal translation of the Chinese characters for Kombucha could be "red mold tea."

However, the type of mold we are discussing here is definitely to be avoided. The most typical types of mold that may infest a Kombucha culture are the same as those you would find on bread or fruit or other decaying food items. While not deadly, they do produce an off-taste and can cause allergic reactions or sickness.



What do you notice about these pics of mold? What color is the mold?



Where is the mold located? What texture is the mold?

Almost all **Kombucha mold is:**

- ☹ **blue or black and fuzzy**
- ☹ **located on top of the culture – not under it nor embedded in a layer**
- ☹ **looks exactly like the type you have seen your whole life**

Trust your instincts. If you have any question or doubt, you can always submit a photo on the [KommUnity Forum](#) or [Kombucha Kamp Facebook Group](#) for an opinion.

### **But my SCOBY looks funny!**

Just because it is not moldy doesn't mean your SCOBY will form in a perfect smooth pancake. The shape and color of your newly growing cultures is not necessarily indicative of the quality of your brew. Odd looking cultures can make a fantastic tasting Kombucha, and great looking ones can fail.

Depending on many factors, SCOBY formation can be quite unusual looking yet completely normal. Sort of like people. (Kombucha and people are very similar in many ways. Don't get me started.)

Here are some photos of normal SCOBY formation and yeastie bits.



*Yeast strands are brown and sometimes clumpy*





*Early SCOBY formation takes a variety of shapes - note the white color of the many dots they will gradually all connect*



*The new SCOBY growth is still translucent*

**For examples and more info VISIT THIS LINK:  
[KombuchaKamp.com/Mold](http://KombuchaKamp.com/Mold)**

To the untrained eye, these odd looking formations can seem startling at first, but over time, they become the familiar process of new SCOBY growth.

**This is why I instruct newbies not to look at  
or disturb their Kombucha for at least 7 days.**

**Why does mold occur in the first place?**

To better understand, let's review the brewing process. The standard recipe

for Kombucha calls for a 90% nutrient solution of sweet tea and 10% Mature KT starter liquid. The starter liquid is the key to protecting the culture from mold.

This mature Kombucha Tea has a pH of 3.0-2.5, low enough to create a natural anti-microbial barrier which inhibits the growth of any foreign microorganisms. The starter liquid acts as a protective layer until the entire sweet tea mixture is converted to young Kombucha (about 3 days), defined as when the mixture's pH drops to 3.0 or below. It is only during that approximately 3-day period that there is the potential for mold to grow.

Mold spores are not visible to the human eye and can lay dormant or survive in extreme conditions. That is why it is impossible to simply wash off the culture in water or vinegar.

Once again: **if you do end up with mold, get rid of your culture**, toss the tea and start over fresh from your SCOBY Hotel.

## How can I prevent mold?

If you find you are getting mold repeatedly, there is something in the environment that is contributing to the problem. Is your water clean? If you aren't sure, boil it without a lid for 10 minutes.

Some other causes for mold include cross-pollination from house plants, cigarette smoke, excessive humidity and cold temperatures (keep your cultures out of the fridge! And use a heating system during colder times of the year).

Tips to prevent mold from recurring:

- ✓ Use starter liquid from your SCOBY Hotel (or any very old KT)
- ✓ If you don't have strong starter liquid, use more of your regular starter per batch or
- ✓ Sprinkle 1-2 tablespoons of distilled vinegar on top of the brew
- ✓ Use a heating pad or other warming method during cold months
- ✓ Remove house plants from the vicinity

- ✓ Make sure there is plenty of air flow – open the cupboard or move to a counter top
- ✓ Do not expose to cigarette smoke

Over time you will discover that mold is very rare and easy to spot. There is definitely no need to fear mold – or new SCOBY formation. The more you observe your culture, the more you will understand its unique process.

At some point in your brewing process, you are going to want to create a SCOBY Hotel. This vacation spot for your SCOBYs is the perfect place to relax until need arises. *(See Chapter 4 to learn how to make a SCOBY Hotel.)*

## CHAPTER 9: OTHER USES FOR KOMBUCHA & EXTRA SCOBYs

One of Kombucha's many gifts is that of self-perpetuation. You can literally make a LIFETIME supply from one culture, if it is properly cared for. At first, this is a miraculous delight for the homebrewer, but after a few cycles, it can seem like you are in trouble with Tribbles.

Many people are loath to simply toss the extra cultures, rightfully acknowledging that the SCOBY is a living organism with its own consciousness and intelligence.

The great news is that this is a win-win situation. Science has barely begun to grasp the full scope of Kombucha's usefulness from functional beverage, to household cleaner, to skin & hair care product to vegan leather substitute.

This flexibility gives the homebrewer an excellent opportunity to experiment. Instead of dreading what to do with those extra cultures – I've included some great tips for other ways to use them.

### Kombucha Spa Recipes & Home Remedies

They say beauty is only skin deep. But when it comes to Kombucha, not only can it help your skin from the inside through improved digestion and the removal of impurities, but it can also be used topically.

The culture pulls circulation to the surface of the skin which regenerates the skin cells. The pH of the culture acts as a mild and all natural acid peel which sloughs dead skin cells and leaves the skin feeling soft and smooth.

**⚠ Warning:** You may notice redness on your skin but it will quickly fade.

If you are sensitive, always test first on a small section of skin.

Here are some easy recipes you can try at home.

## Simple SCOBY Face Mask

- ✓ 1 SCOBY culture
- ✓ some fermented KT

1. **Place SCOBY and just enough KT to create a paste** (about 1/4-1/2 cup depending on the size of your culture) in the blender and pulse until smooth. A raw egg or almond oil may be added to act as a binder.
2. **Apply to face** – it will have a chunky, applesauce type texture to it so it may not go on evenly – that's ok.
3. **Allow to remain on face 5-15 minutes**, then wash off.
  - ✓ I find its best when I can lay down and relax for these few minutes while the masque is on my face.
  - ✓ If you like, you may also add Aloe Vera, Vitamin E oil and essential oil (just a few drops for fragrance) for added benefits. Experiment until you find your perfect recipe.

## Kombucha Clay Masque

- ✓ kaolin clay
- ✓ fermented KT

1. **Mix together the clay and KT** until you've formed a paste.
2. **Apply to the face** and allow to dry.
3. **Rinse.**

## Whole SCOBY

- ✓ SCOBY

1. **Place an entire culture directly on your face** (no it will not suck your brains out!).

2. **Sit still.**

- ✓ The hardcore version of the paste acid peel supposedly creates nano-structures which help to fill in fine lines and wrinkles on your face.
- ✓ Keep a towel handy to catch the drips. Lying prone will prevent the culture from slipping off.
- ✓ You could store this same culture in a separate jar just for your facial regimen, otherwise compost after use – do NOT use cultures that have been on your face to brew Kombucha.

## Facial Toner

- ✓ fermented KT
- ✓ essential oils

1. **Combine fermented KT & a few drops of essential oil** in a glass jar.

2. **Apply** with a cotton ball.

3. **Store in a cool, dark location.**

- ✓ For best results, make small batches. Tightens skin and shrinks pores.
- ✓ Adding a cup or two of KT & essential oils to your bath not only softens the skin, but removes soap scum from the tub.

## Hair Tonic

- ✓ fermented KT
- ✓ fresh herbs – rosemary, mint



✓ To help control dandruff, add 1- 2 drops of tea tree oil (optional)

1. Add fresh herbs to a bottle or jar.

2. Cover with well fermented KT (no sugar residue in your hair).

3. Allow to sit for 3-5 days.

4. Use as the last rinse before leaving the shower.

5. Squeeze excess from hair but allow it to remain in the hair.

✓ The smell will quickly fade when it dries.

✓ Comb hair through to remove tangles.

✓ Leaves hair soft and shiny and prevents excess oil.

## Living Band-Aids

In addition to cultivating beauty, the Kombucha culture has many other topical uses. Biofilms are not new and have a wide range of applications from medicinal bandages, replacement blood veins, speaker diaphragms and more.

BASYC is one such biofilm that is being tested and manufactured for such purposes. They have isolated an acetobacter xylinum strain – one of the bacteria native to the Kombucha culture – to create this biofilm.

The pH of the culture inhibits the growth of harmful organisms. Moreover, the bacteria send out microfibrils, which are filament strands that link up with other bacteria, creating a nano-structure that thickens over time.

✓ **Use pieces of the Kombucha culture topically to speed healing** of cuts, burns and other wounds. Cut a piece to size and hold in place with a bandage wrap. It will sting a bit, much like iodine.

- ✓ **Apply KT or SCOBY to warts or moles.** Many report they fall off or fade away within a few treatments.
- ✓ **Place culture directly on the scalp** to calm dandruff or cradle cap.

### **Vegan Sushi?**

Increasing the amount of cellulose in your diet can help ease elimination and improve colon health.

In many parts of the world, **the culture itself is considered a delicacy of the most concentrated form** and is consumed in small pieces.

With the oceans being poisoned by plastic, healthy fish supplies are running low. **Save a fish, eat a SCOBY!** The rubbery texture of the SCOBY, it is actually quite similar in texture to raw squid.

- ✓ If you don't want to eat it straight, try adding a piece to your smoothie.
- ✓ In the Philippines, the SCOBY is marinated in sugar water until it becomes like a gumdrop.

### **Kombucha & Animals**

Kombucha may help to restore balance to your pet's digestive system. Especially after being administered anti-biotics, Kombucha can rebalance healthy flora in your pet's gut. But remember, they aren't people and the dosage isn't going to be the same. For smaller pets, keep the portion size small (1-2 teaspoons), once a day.

I give my dog Sydney a splash of Kombucha from the Continuous Brewer every morning with her food. Though she sometimes snorts at the first smell of the booch, she always finishes her breakfast!

I wouldn't recommend Kombucha be poured over dry food or it will just clump up and your dog (or cat or bunny or horse...) might not eat it. Only wet food or a wet/dry mix.

As an alternative, for those who only serve dry food to their pets, try adding Booch to their water dish, again 1-2 teaspoons for smaller animals, 1-2 ounces for larger ones, once a day. Some animals sensitive to smell might hesitate to drink first. If so, simply reduce the dosage until they are comfortable with the flavor, then gradually increase.

Since beginning daily consumption, Sydney's bowel movements are more consistent and much easier for me to clean up. Her coat, which has improved over time, has grown even shinier and glossier since adding Kombucha to her daily routine. She has fewer fleas in the summer months.

In fact, if your pet has any skin ailments or external evidence of fleas, use Kombucha in a spray bottle to apply directly to the affected area. It should soothe some of the pain as well as drive away fleas as they do not like the pH levels.

Also, if your pets are dirty, grab that same spray bottle, fill it with a Kombucha/water mix (and a drop of tea tree oil if you want – but just 1 small drop!), get yourself a rag and give them a few sprays. Use the rag to wipe them clean and you will see the dirt come off very nicely.

Not only that, because Kombucha is anti-microbial, it prevents that “wet-dog” odor from taking hold, instead leaving your dog smelling fresh. And just like human hair, Kombucha will soften your pet's fur whether you spray it on or feed it to them.

If you want to get really creative, some dogs enjoy a chewie treat made from a dehydrated SCOBY. Simply dry out an old SCOBY that you were

ready to retire anyway, then smear it in peanut butter or some other delicious substance and watch the dog go nuts on it. The texture of the dried out culture is like pliable leather.

I guess it should be no surprise that Kombucha can be a healthy addition to your pet's life. However, just like with humans, Kombucha is a detoxifier, so keep the servings very small, especially at first, and observe how your pet reacts to the Kombucha treatment.

## Kombucha in the Garden

pH is a measure of the concentration of hydrogen ions. The higher amount of hydrogen ions present, the more acid the pH. Soil acidity affects a plant's ability to absorb necessary nutrients.

- ✓ Many plants thrive in more acidic soil environments. **Grind up or coarsely chop a SCOBY and add it to your soil mix.**
- ✓ **Adding extra SCOBYs to the compost pile** is a great way to return the culture to the earth. I throw them in my worm bin and boy, do I have a lot of happy worms! =) I use the worm tea to nourish my garden.

## CHAPTER 10: WELLNESS, SUSTAINABILITY & COMMUNITY

That pretty much covers what you need to know about safe, delicious Kombucha Brewing. Allow me, here at the end, to offer you a broader view of the adventure you are embarking upon.

While the FDA doesn't support any claims made about Kombucha, or any food for that matter, many people report receiving several health benefits from drinking Kombucha. Let your body be the judge. When you drink it, how do you feel?

Science and scientific research are valuable tools for understanding our universe. However, our over-dependence on them has clouded our ability to trust our instincts. For me, drinking Kombucha is a way of reconnecting with the body on a cellular level. I listen to the brain in my gut. I observe the physical sensations – warmth in the belly, movement in my intestines, or relief from a headache. I invite you to take more notice of your body – how consuming, not just Kombucha, but everything that you are putting into your body makes you feel.

**Brewing Kombucha at home boosts wellness.** For me, Kombucha is more than a health beverage or a latest trend. It is a symbolic and literal connection with the natural world. We need bacteria to survive. They tell our cells how to behave and when there aren't enough of them in our body, our body goes rogue and starts attacking itself.

There has been a huge rise in auto-immune disease and allergies. These are most directly due to the huge change our diet has undergone in just a few short decades. The amount of processed food, the lack of nutrients, the additives, the preservatives, the colorings and all the rest have robbed our bodies of its health. Kombucha is simply one of the MANY traditional fermented foods that humans have been consuming since time immemorial that has allowed us to flourish – even when we were living in the dirt! In the trees! In caves!

Now, we live in our carefully controlled environments, and heck, I'm not ready to move out to a hut but I am ready to find any way possible to include those nourishing foods back into my life to regain balance.

I am no "food saint." I drink Coke and eat hamburgers from time to time, too (albeit grass fed beef and raw milk cheese as much as possible: that's another topic all together). The Kombucha helps to keep everything running smoothly instead of gumming up the works. It keeps those bad foods in check and my diet has gradually changed as those foods don't "feel good" to me. This has also reduced my sugar cravings and helped me maintain a healthy weight. I get loads of compliments on my skin and seldom have blemishes.

Enough about me – how about you?? Keep a little journal to note your observations. Then share them with the KommUnity or drop me a private note. Life is quite a journey and Kombucha is here to help.

By ridding your body of toxins naturally, you allow it to function at its optimal level thereby reducing the need for pharmaceuticals and other artificial chemicals. That's good for your health, the environment and your pocketbook!

**Brewing Kombucha at home is sustainable.** When you purchase Kombucha from the store, you are purchasing a great product, but you are also bringing home extra bottles, many of which simply end up in the recycling bin (or garbage dump!)

However, when you have fresh KT on tap, you can grab any glass that you already have on hand, thereby producing less waste. Also, when you purchase your supplies in bulk, rather than individual packages, you reduce the amount of waste you produce.

Unlike most disposable products in our consumer culture, Kombucha is self-perpetuating. All you have to do is care for it properly and it will give you a lifetime supply of KT! Think of all that abundance you have at your finger tips. Think of what other things could flourish under your loving touch.



Learning the process of Kombucha is also empowering. Much of our traditional connection to the food supply has been eroded in the name of convenience. Our lack of time to do anything other than work has robbed us of more than just that time – it has robbed us of our connection to the earth – to our family farmers – to our cultural diversity. We are in the habit of purchasing ready-made products and oftentimes the idea of having to make things for ourselves is a burdensome chore. Those preparations, those ways in which we care for ourselves, can provide much satisfaction.

**Brewing Kombucha at home fosters community.** Because it is always making more of itself, it becomes easy to share it with friends and family. As we reap the benefits of drinking Kombucha, we naturally want to reach out and share it with others who are in need of healing.

Like the bacteria and yeast that come together in symbiosis to form the culture, we too must find a way to bridge our differences and form a loving and sustainable community – not just with other human beings, but will all of the organisms on our beautiful planet. Our current practices are hurting that which gives us life. Only we can make the changes needed.

I sometimes feel overwhelmed by things that are going WRONG in our society. While I may be frustrated that the government or corporations aren't doing enough, at least I can control my own behavior. I know that by making the changes I can in my own life, I'm at least taking a step in the right direction. Soon, those steps become easy and I'm ready to incorporate another change.

Here's an example – I wanted to stop using plastic bags. I didn't want to take them from the supermarket or store. At first, the times when I would forget to bring my own grocery bag, I would say to myself “Oh well, I forgot, guess I'll take a bag just this time.”

But wait. Who forgot the bag? I did. So why am I putting the mistake on someone (everyone) else by using an unsustainable bag? Instead, I began to take responsibility for my actions and purchased a reusable bag to use for that trip home from the store.

Soon, I had so many reusable bags, that it was easy to remember. Or, if I forgot, I would buy less and carry it all in my hands. Now I almost never forget to have a bag with me, and there's always one in my purse! I give away reusable bags to friends.

That's just one small example, but making that small change cost me very little and altered my habits forever. I have found that doing the right thing is often very easy if you know what to do. If we all make enough of these changes, we can have a real impact.

So what does this have to do with Kombucha? I believe that Kombucha itself, in combination with the process of brewing and the experience of making your own, offers a means for empowerment at a time when many are feeling disempowered.

By brewing your own healthy beverage, you are taking command of your well-being and your environment. You are declaring your desire for a different choice than the ones offered. You are registering your vote for a more conscious world.

And moving forward, our society must learn to foster those 3 elements without looking for help from the government or corporations: wellness, sustainability and community. Brewing your own Kombucha contributes toward all three.

That's what I believe anyway. If you've gotten this far, here's guessing you have at least some of the same beliefs. So, if you'd like to meet other home-brewers just like you from all over the world – join us at the KommUnity!

☺ & ♥ *Hannah*

**Questions? Feedback? Drop me a line any time**

**customerservice@kombuchakamp.com**

**I LOVE hearing from my readers & clients =)**

**Version 2.0**

**Written By Hannah Crum & Alex LaGory**

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# How to Make Kombucha Tea

## Expert DIY Guide



...WITH YOUR HOST THE KOMBUCHA MAMMA

Kombucha has been made for thousands of years by people all over the world because it is easy to prepare and offers immediate and long term benefits to the regular drinker. The ingredients are inexpensive and the process is simple and sustainable, however care should be taken anytime food is prepared at home. Follow these directions to brewing success.

### “What Supplies Do I Need?”

#### 1 Gallon Vessel Recipe

scale up or down as necessary

*(click on ingredient for more info)*

- ✓ **1 Cup Organic Sugar**
- ✓ **4-6 Bags Tea, or 1-2 tablespoons loose leaf tea – Hannah’s Private Blend [Here](#)**
- ✓ **Starter Culture – SCOBY, see notice →**
- ✓ **1 Cup Strong Starter Liquid**
- ✓ **Purified Water**
- ✓ **Tea Kettle or Pot**
- ✓ **Brewing Vessel**
- ✓ **Cloth Cover**
- ✓ **Rubber Band**
- ✓ **Thermometer (optional)**
- ✓ **Funnel (not needed until bottling stage)**

**For Brewing Success,  
NEVER use the following  
types of SCOBYs:**

- Dehydrated
- Refrigerated
- Exposed to Mold
- Undersized
- Grown From A Filtered Brew
- Stored in Plastic 30+ Days
- Mushy or Disintegrating
- Who Knows Where It's Been??

**LEARN MORE AND  
GET A FRESH SCOBY  
BY CLICKING HERE!**

<https://www.KombuchaKamp.com/Kombucha-Cultures>

### Stage One: Make the Sweet Tea Solution



**This feeds the Kombucha culture and transforms into delicious Kombucha.**

1. Boil 4 cups of water.
2. Add hot water & tea bags to brewing vessel.
3. Steep 7-15 minutes, then remove.
4. Add sugar and stir to dissolve.
5. Fill vessel  $\frac{3}{4}$  full with purified cold water – this will bring down the temperature of the tea.

**\*Note: If the mixture is now below body temperature, proceed.**

**If it's still too warm, wait until it cools before moving to the next stage.**



## Stage Two: Add the Kombucha SCOBY Culture



Use clean hands to handle the culture.

1. Add SCOBY, then starter liquid.
2. Cover with cotton cloth, secure with rubber band.
3. Say a prayer, send good vibes, commune with your culture (optional but recommended).
4. Set in a warm, airy location out of direct sunlight & away from aromatic or greasy food preparation.
5. Do not disturb for 7 days.

**\*Note: This can be very difficult for a newbie brewer, but wait all seven days before peeking at your brew. This will make the process go more smoothly.**

**Newbie  
Brew  
Tip**

**Kombucha thrives between 75 - 85 degrees. In most environments, a heating mat, even part time, is critical to long term brewing success.**



**WATCH VIDEO NOW**

at

**KombuchaKamp.com/Heating**

<https://www.KombuchaKamp.com/Heating>

## Stage Three: Taste & Perfect the Kombucha Brew



1. After 7 days, gently insert a straw beneath the SCOBY and take a sip. Too tart? Reduce your brewing cycle next time. Too sweet? Taste each day until it reaches optimum flavor.
2. Properly brewed Kombucha has a slightly sharp (acidic) apple cider, not sweet taste.
3. Brewing cycles normally range between 7 days & 2 weeks, varying greatly by temperature.
4. A couple of cycles may be required to discover the exact taste and timing of the brew. Be patient.



**NO-FRILLS  
Package**

**COMPLETE  
Package**



**DELUXE  
Package**



### HOW DOES CONTINUOUS BREWING WORK?

"In the batch brew method, every time you brew, you make a bunch of sweet tea and combine with a little delicious starter liquid, a super sweet 9/1 solution. After 1-2 weeks, the SCOBY and starter liquid work very, very hard to finally transform ALL that liquid into Kombucha Tea (KT)..."

By contrast, with your Continuous Brew System, you will only be refilling around 25% of the container with sweet tea nutrient solution, while 75% is your mature Kombucha and giant SCOBY, this time a powerful 3/1 concentration in favor of the Kombucha. It will take only a day or two to transform that relatively small amount of sweet tea into healthful KT..."

**NEXT TOPIC: Increased health benefits?**

[Find out more >>](#)

<https://www.KombuchaKamp.com/CB>





## Follow These Safety Tips:

| DO's   | DON'T's   |
|--|---|
| <p><b>DO</b> – Sanitize the brewing location &amp; supplies prior to use.</p> <p><b>DO</b> – Rinse hands with filtered water or vinegar before handling the SCOBY.</p> <p><b>DO</b> – Select glass, stainless steel or oak as a brewing vessel.</p> <p><b>DO</b> – Brew with filtered water.</p> <p><b>DO</b> – Brew with organic, fair trade sugar &amp; tea whenever possible.</p> <p><b>DO</b> – Cover with a cotton cloth cover or coffee filter w/rubber band.</p> <p><b>DO</b> – Select a shaded, warm location w/good airflow.</p> <p><b>DO</b> – Give the culture 7 days to ferment and develop.</p> <p><b>DO</b> – Pull new starter liquid from the top of the previous batch.</p> <p><b>DO</b> – Make a SCOBY Hotel.</p> <p><b>DO</b> – Throw away any batch that gets mold.</p> | <p><b>DON'T</b> – Use chlorine. It kills bacteria &amp; we ♥ the bacteria in our SCOBYs!</p> <p><b>DON'T</b> – Use soap. See above.</p> <p><b>DON'T</b> – Select plastic, crystal or leaded ceramic as a brewing vessel.</p> <p><b>DON'T</b> – Brew with tap water.</p> <p><b>DON'T</b> – Brew with stevia, raw honey or herbal teas.</p> <p><b>DON'T</b> – Cover w/cheesecloth. The weave is too loose and will allow fruit flies to get in.</p> <p><b>DON'T</b> – Store in direct sunlight, in a closed cupboard or in a cool location.</p> <p><b>DON'T</b> – Disturb the vessel. Too much movement causes the culture to not form properly.</p> <p><b>DON'T</b> – Pull new starter liquid from the bottom of the batch. Yeast will overpower your brew.</p> <p><b>DON'T</b> – Store more than 1 or 2 extra SCOBYs in your brewing vessel. The brew will be vinegary.</p> <p><b>DON'T</b> – Try to salvage a moldy batch.</p> |

## Quick FAQ

### How much Kombucha should I drink?

Start off with 4oz and monitor the body's response. Drink water to flush toxins. Increase intake as desired.

### Does Kombucha have caffeine/sugar?

Both caffeine and sugar are consumed by the Kombucha culture during fermentation. Content depends on the ingredients and brewing cycle, but on average Kombucha contains only a few grams of sugar and a few milligrams of caffeine per 4oz serving.

### What kind of tea is best with Kombucha?

Nearly any tea may brew successful Kombucha. Long term health of the culture is best with mixed green and black tea.

#### More Questions?

<https://www.KombuchaKamp.com/FAQ>



Search = KombuchaKamp

Hannah

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<http://Store.KombuchaKamp.com>

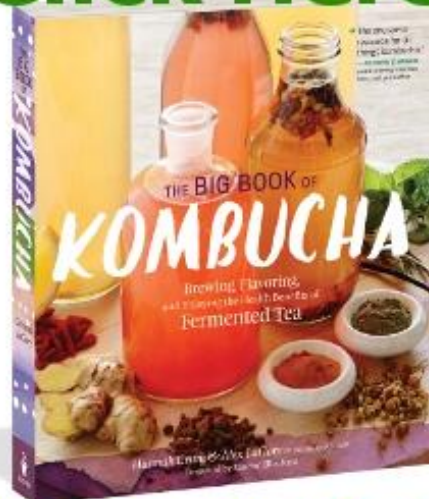
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**PAPERBACK or HARDCOVER**

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# Brew Minder Logs

## PERSONAL BREWING LOG

| Brew Date | Recipe Notes<br><small>(type of tea/sugar)</small> | Harvest Date | Observations and Flavor Notes<br><small>(pH, taste, etc.)</small> |
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|           |  |              |   |
|           |  |              |   |

## PROFESSIONAL BREWING LOG

| Date | Sweet Tea: Brix | pH | Qty | Starter Liquid: Brix | pH | Qty | Temp | SCOBY Qty |
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|

| Date | Ending Brix: | pH | % ABV | # Days Brewing | Flavor | Notes |
|------|--------------|----|-------|----------------|--------|-------|
|------|--------------|----|-------|----------------|--------|-------|

| Date | Sweet Tea: Brix | pH | Qty | Starter Liquid: Brix | pH | Qty | Temp | SCOBY Qty |
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|

| Date | Ending Brix: | pH | % ABV | # Days Brewing | Flavor | Notes |
|------|--------------|----|-------|----------------|--------|-------|
|------|--------------|----|-------|----------------|--------|-------|

| Date | Sweet Tea: Brix | pH | Qty | Starter Liquid: Brix | pH | Qty | Temp | SCOBY Qty |
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|

| Date | Ending Brix: | pH | % ABV | # Days Brewing | Flavor | Notes |
|------|--------------|----|-------|----------------|--------|-------|
|------|--------------|----|-------|----------------|--------|-------|

| Date | Sweet Tea: Brix | pH | Qty | Starter Liquid: Brix | pH | Qty | Temp | SCOBY Qty |
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|
|------|-----------------|----|-----|----------------------|----|-----|------|-----------|

| Date | Ending Brix: | pH | % ABV | # Days Brewing | Flavor | Notes |
|------|--------------|----|-------|----------------|--------|-------|
|------|--------------|----|-------|----------------|--------|-------|