

“The one go-to resource for all things kombucha.”

— ANDREW ZIMMERN,  
award-winning television  
host, chef, and author

THE BIG BOOK OF

# KOMBUCHA

Brewing, Flavoring,  
and Enjoying the Health Benefits of  
Fermented Tea

Hannah Crum & Alex LaGory OF KOMBUCHA KAMP  
Foreword by Sandor Ellix Katz

THIS IS AN EXCERPT FROM

THE **BIG BOOK** OF

# KOMBUCHA

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## What Exactly Is a SCOBY?

The SCOBY is a zoogleal mat — that is, a mass of bacteria and yeast, tied together with cellulose nanofibers. The primary bacteria in a SCOBY is *Komatagaeibacter xylinum* (aka *Acetobacter xylinum*), which produces copious amounts of cellulose, although there could also be any of several other strains. The bacteria and yeast in a SCOBY depend on each other, in that the by-products of the yeast fermentation feed the bacteria and the by-products of the bacteria fermentation feed the yeast.

They build the matlike cellulose structure to make working together easier. Think of the SCOBY as an apartment building with the yeast living on some floors and bacteria on others. The mat protects the fermenting tea — their food source — against infiltration by wild bacteria and yeast.

It also reduces evaporation of the liquid while holding in more of the naturally occurring carbonation as the batch progresses. And the mat makes it extremely easy for kombucha brewers to transfer the bacteria and yeast from one batch to the next, ensuring continued propagation of select strains and species.

The symbiosis between the bacteria and yeast acts like a double karate chop to pathogenic organisms that might try to invade the sweet tea solution. The low pH of the starter liquid and culture disrupts the cell membranes of unwanted bacteria, while several of the healthy organic acids that create the low pH in the first place demonstrate specific antibacterial, antiviral, and other antimicrobial properties. This dual function makes kombucha

even more effective as a health tonic because it reduces the already small likelihood that the brew will develop any toxins.

The SCOBY is the mother ship to millions of microorganisms, all working together to support their continued existence. Let's begin with a basic introduction to these component organisms, which will provide the necessary context for understanding the nuances of the symbiotic relationship.

### KOMBUCHA MAMMA SEZ

#### Trust All Your Senses

“Brewing and drinking kombucha is a full sensory experience. You can expect the following:

- **TASTE:** It is sweet and tart, with complex notes that change over time.
- **SMELL:** The aroma should have a sharp tang indicating a healthy ferment.
- **SIGHT:** The SCOBY is often creamy white with brown yeast strands and may be pockmarked with blowholes to release carbon dioxide. Bubbles play beneath the surface of the culture.
- **TOUCH:** The SCOBY feels smooth and soft.
- **SOUND:** The happy burbling sounds of gently popping bubbles indicate a healthy brew.

How does your experience of kombucha match up?”

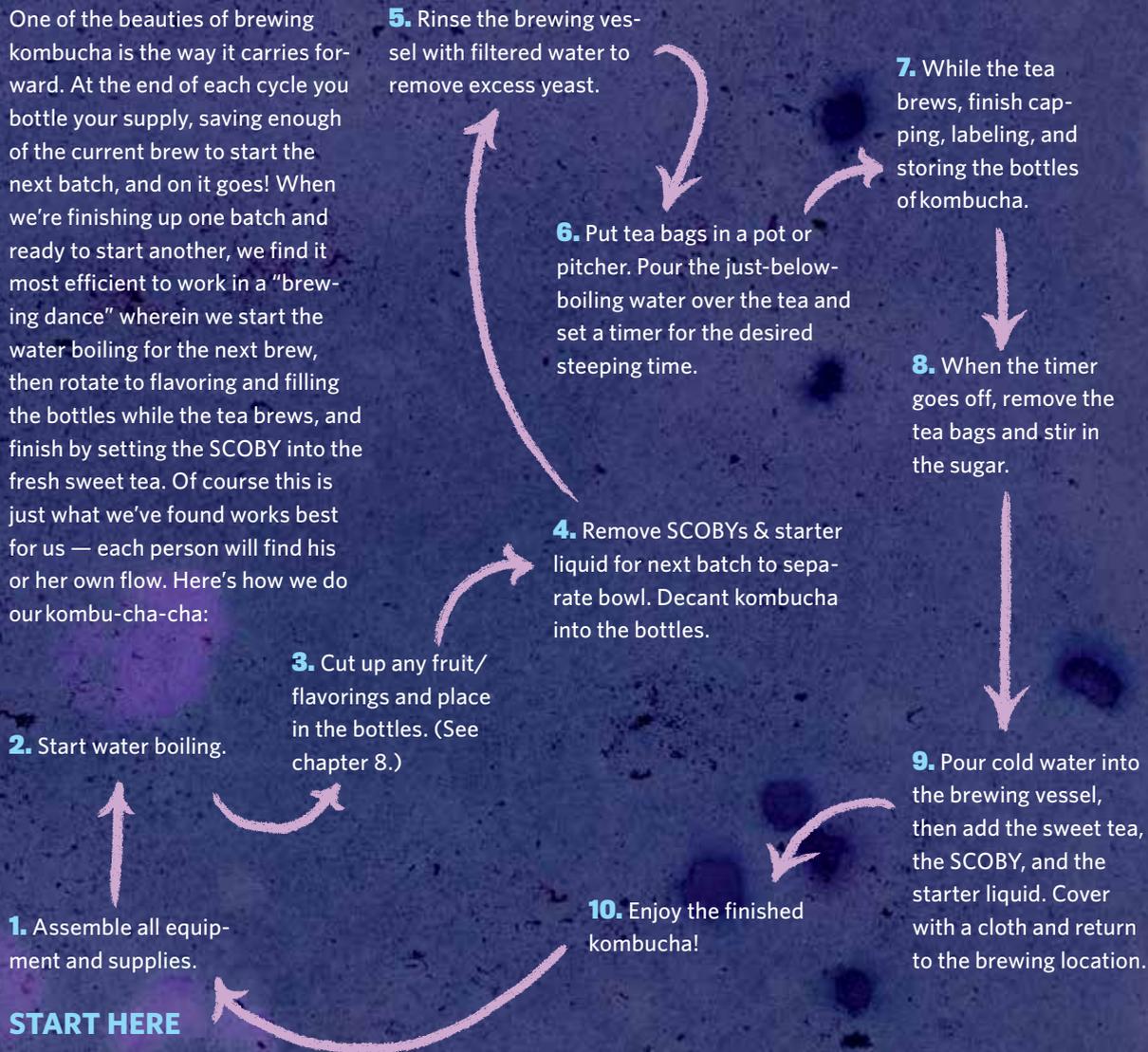
These SCOBY Hotels (see page 37) show how healthy SCOBYs can vary in size and shape.



# DOING the KOMBU-CHA-CHA

## The Next Steps

One of the beauties of brewing kombucha is the way it carries forward. At the end of each cycle you bottle your supply, saving enough of the current brew to start the next batch, and on it goes! When we're finishing up one batch and ready to start another, we find it most efficient to work in a "brewing dance" wherein we start the water boiling for the next brew, then rotate to flavoring and filling the bottles while the tea brews, and finish by setting the SCOBY into the fresh sweet tea. Of course this is just what we've found works best for us — each person will find his or her own flow. Here's how we do our kombu-cha-cha:



# “Kom-pache”

## (Mexican Pineapple Kombucha)

Some claim that kombucha has been fermenting in Mexico since the 1500s. This adaptation of *tepache*, a traditional ferment of Mexico, utilizes the natural sugar present in pineapple concentrate in place of cane sugar in the primary fermentation. If you're substituting fresh pineapple, use 2 cups of chopped fruit for every cup of sugar.

*Yield: 1 gallon*

### INGREDIENTS

- 1 quart extrastrong tea
- 1 (12-ounce) can frozen pineapple concentrate, defrosted, or 2 cups diced fresh pineapple
- 3 quarts water
- 1 SCOBY
- 1 cup starter liquid

### INSTRUCTIONS

Combine the brewed tea with the pineapple juice concentrate and stir until completely dissolved. Pour the water into the brewing vessel. Add the tea mixture. If the mixture is warm, let cool to body temperature. Then add the SCOBY and starter liquid. Cover and set aside to ferment.

This brew may develop quickly, so begin tasting at 5 days to prevent a mouth-puckering batch!



## Black Pepper

With its warming properties, black pepper is used to treat cough, cold, indigestion, gum problems, hoarseness, dysentery, and indigestion. Piperine, an alkaloid in pepper, has been shown to have antifever, anti-inflammatory, and pain-relieving benefits.

### Cherry Spice

#### CHERRIES, HALVED

1 tablespoon / ½ cup

#### BLACK PEPPER

½ teaspoon / 2 teaspoons

#### CINNAMON BARK CHIPS

¼ teaspoon / 1 teaspoon

### Heaven Scent

#### CARDAMOM, GROUND

⅛ teaspoon / ½ teaspoon

#### CLOVES, WHOLE

3 cloves / 10 cloves

#### FRESH GINGER, DICED

¼ teaspoon / 1 teaspoon

#### BLACK PEPPER

½ teaspoon / 2 teaspoons

### Pepper Berry

#### STRAWBERRIES, CHOPPED

1 tablespoon / ½ cup

#### RASPBERRIES, LIGHTLY MASHED

1 tablespoon / ½ cup

#### BLACK PEPPER

½ teaspoon / 2 teaspoons

## Ginger

Highly revered in both TCM and Ayurveda, ginger has a long history of use in treating digestive issues, increasing circulation, and creating warmth. Its spicy sweetness pairs particularly well with kombucha and can be combined with myriad other flavoring agents to create any number of flavors. Readily available fresh, dried, ground, or candied, ginger can be used in any form as a flavor agent. Some recipes specify a particular type, but fresh ginger, finely chopped, gives the most flavor. No need to peel it, either!

### Apple Ginger

#### APPLE, DICED

¼ cup / 1 cup

#### FRESH GINGER, DICED

¼ teaspoon / 1 teaspoon

### Ginger Buzz

#### FRESH GINGER, DICED

¼ teaspoon / 2 teaspoons

#### HONEY

1 teaspoon / 1 tablespoon

#### BEE POLLEN, LIGHTLY CRUSHED

⅛ teaspoon / 1 teaspoon

### Jade Dragon

#### GREEN JUICE

2 teaspoons / 2 tablespoons

#### FRESH GINGER, DICED

¼ teaspoon / 2 teaspoons

#### CAYENNE

⅛ teaspoon / ½ teaspoon

## Ginseng

The Chinese word for ginseng, *rénshēn*, means “person root,” a description of the way the fleshy, forked root often resembles a person with two legs. Sweet and slightly warming, with a hint of bitterness, it acts as an aphrodisiac, invigorates spleen and lung *qi*, promotes the production of body fluids, and calms the nervous system.

Ginseng comes in a variety of forms. We find capsules are the easiest and most affordable source. If using dried ginseng root, substitute 1 teaspoon for every capsule.

### Just Ginseng

#### GINSENG CAPSULE

1 capsule / 4 capsules

### Panax Pie

#### GINSENG CAPSULE

1 capsule / 4 capsules

#### APPLE, DICED

1 tablespoon / ½ cup

#### CINNAMON BARK CHIPS

¼ teaspoon / 1 teaspoon

### Mint-seng

#### GINSENG CAPSULE

1 capsule / 4 capsules

#### FRESH PEPPERMINT, ROUGHLY

#### CHOPPED

1 teaspoon / 1 tablespoon

Quantities listed are for 16 ounces / 1 gallon



apple GINGER

Tulsi MINT

cherry SPICE

IMMUNE  
Booster Brew



## Kombucha 'n' Kale Smoothie

This nutrient-dense combo is even better than Popeye's spinach trick! The acidity of the kombucha and orange juice gently softens the intensity of the kale, while the banana gives good texture and the berries add a hint of sweetness.

*Yield: 2 servings*

- 1 medium banana
- 1 whole orange, peeled and seeded
- 1 cup fruit (pineapple, strawberries, cherries, blueberries, peaches, mangoes)
- 1 cup spinach or baby chard
- 3 large kale leaves, stems removed
- 1 cup I Dream of Greenie kombucha (page 210), plus more as needed
- Ice cubes

Combine the banana, orange, fruit, spinach, kale, and kombucha in a blender. Top off with 1 to 2 cups of ice cubes, and blend well, adding more kombucha if necessary for a smooth texture. Extra smoothie can be stored in the fridge for up to 24 hours.

## Kombucha Nut Smoothie

The high fat content of the nuts lends a creaminess to this cool nondairy treat. Fruity kombucha pairs well with creamy cashews, but try it also with Brazil nuts, almonds, or hazelnuts. Soaking the nuts softens them and breaks down phytic acid, an anti-nutrient that impedes digestion and absorption of protein.

*Yield: 2 servings*

- ½ cup raw nuts
- 1 cup Raspberry kombucha (page 194), plus more as needed
- 2 teaspoons maple syrup (grade B, if available)
- 2 cups ice cubes

Soak the nuts in water for about 2 hours. Drain and rinse well.

Combine the soaked nuts in a blender with the kombucha, maple syrup, and ice cubes. Blend slowly, adding more kombucha as needed for a smooth texture.





# Kombuchup

This thick, crimson ketchup is full of zip! Take it from “great” to “wowie-zowie” with curry, chipotle, or anchovy, à la the original “ketchup” (see History of Ketchup, below).

*Yield: 2½ cups*

## INGREDIENTS

- 12 ounces tomato paste
- ¼ cup sugar
- 2 teaspoons molasses
- ½ teaspoon sea salt
- ½-1 cup kombucha vinegar (page 256)

## FLAVORING SUGGESTIONS

*Mix and match to create your own favorite flavor.*

- 3 garlic cloves, minced, or ¼ teaspoon garlic powder
- 2 anchovy filets, chopped
- ¼ teaspoon chipotle powder

- ¼ teaspoon ground cinnamon
- ¼ teaspoon curry powder
- ¼ teaspoon ground mustard
- ⅛ teaspoon ground allspice
- ⅛ teaspoon cayenne
- ⅛ teaspoon ground cloves
- ⅛ teaspoon ground nutmeg

## INSTRUCTIONS

Mix the tomato paste, sugar, molasses, and salt with ½ cup of the vinegar in a medium bowl. If the ketchup is thicker than desired, slowly add more vinegar until it reaches your ideal consistency. For thicker ketchup, start with ¼ cup vinegar.

Add seasonings as desired. You can split the batch to make different flavors, but adjust the amounts accordingly.

Store in the refrigerator, where Kombuchup will maintain its flavor for about 2 weeks, or longer if you use pasteurized vinegar.

## HISTORY OF KETCHUP

Ketchup has been around for thousands of years, but it wasn't always made out of tomatoes. Originating in Asia as a fermented fish sauce called *kôechiap* or *kê-tsiap*, it dates back to 300 BCE. Easy to store on long voyages, the sauce made its way along trade routes to Indonesia and the Philippines. British traders who developed a hankering for the salty-sour fish flavor brought it back to England in the 1700s.

Over time, the base was made with a variety of ingredients, including oysters, mushrooms, and

walnuts, but it remained extremely salty, making it a natural preservative. Colonists brought their traditional ketchup recipes with them to the New World. Though tomatoes were considered poisonous until the early 1800s, once that notion was dispelled they quickly gained popularity. By the time ketchup started showing up in American cookbooks of the mid-1800s, it was as a tomato-based sauce.

## Kombucha Yeast Mask

Yeast, which are rich in B vitamins and trace minerals, stimulate circulation to create a rosy glow. Since yeast bodies are by-products of the brewing process, put them to work in your beauty routine! (See page 109 for how to harvest yeast.) This mask works wonders on acne and acne-prone areas. Use as often as desired.

*Yield: 1 treatment*

### INGREDIENTS

- 1 tablespoon raw honey
- 1 teaspoon kombucha yeast (in solid or liquid form)

### INSTRUCTIONS

Mix the honey and yeast in a small bowl to create a spreadable paste. Smooth onto your face. Leave on for 15 to 20 minutes; then wash off with warm water. The yeast may cause a tingling sensation that most people find pleasurable. If it becomes uncomfortable, wash the mask off immediately.

## Soothing SCOBY Cream

SCOBY cream has myriad uses — as a facial mask, to calm eczema or psoriasis flare-ups, as an emollient to soften dry skin, as a wound poultice, and more. Start with this basic recipe and then mix in skin conditioners or essential oils if desired. The texture is similar to that of applesauce — other oils may help bind the cream better — but using it while it's a bit goopy also works great.

*Yield: 1 cup*

### INGREDIENTS

- 4–6 ounces SCOBY
- $\frac{1}{8}$  cup unflavored kombucha or kombucha vinegar (page 256)
- 1–2 drops essential oil, for fragrance (optional)

### EMOLLIENT SUGGESTIONS

Leave your cream plain or choose one or two of these options:

- 1 ounce olive oil
- 1 ounce almond oil
- 1 ounce vitamin E oil
- 1 ounce rose-hip oil

### INSTRUCTIONS

Combine the SCOBY and half of the kombucha in a blender. Pulse a few times; then purée, adding more kombucha as necessary to achieve the texture of applesauce. The cellulose won't break down completely unless you have a very powerful blender, so the cream may be a bit chunky.

### KOMBUCHA MAMMA SEZ

#### Culture Tips

- Thin SCOBY babies,  $\frac{1}{8}$  to  $\frac{1}{4}$  inch thick, have the most comfortable feel on the skin.
- It's easy to breathe through the SCOBY, but for extra comfort, cut eye, nose, and mouth holes with a clean pair of scissors.
- You can use a single culture four to six times as a facial mask. For maximum potency, store them in strong liquid between uses.
- Store cosmetic SCOBYs in a separate hotel so they don't get mixed up with your brewing SCOBYs.