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MAUBY/MABÍ

When I visited the Caribbean island of St. Croix, I knew to be on the lookout for mauby—*mabí* in Spanish—a lightly fermented soft drink made from the bark of the mauby tree (*Colubrina elliptica* or soldierwood) and enjoyed in many Caribbean lands. Mauby is bitter, sweet, and very bubbly due to the saponins in the bark. People flavor it with different spices: cinnamon, nutmeg, mace, star anise, ginger, and beyond.

Years earlier I had made a couple of batches as best I could, without ever having tasted it before, using bark and instructions that were mailed to me by a Puerto Rican reader of *Wild Fermentation*. The only problem was, she didn't know how I would be able to start the mauby,

which is typically started by backslopping from a previous batch. I improvised using water kefir, with great results. My experience is that starters—especially in the realm of lightly fermented sweet beverages—are largely interchangeable.

At the Saturday morning farmers market in St. Croix, I was very excited to find a woman selling her homemade mauby. It was bottled in reused plastic beverage bottles, bulging with the pressure of fermentation. The cold mauby was delicious and refreshing in the hot weather there! I managed to bring a small bottle home with me to use as a starter, and I've kept a little (in the refrigerator) from each batch I've made since then, backslopping continuously for a decade now.





3 days to 1 week





Crock or another vessel with at least 1-gallon/4-liter capacity

Reused plastic soda bottles or other sealable bottles. Plastic has the benefit of allowing you to feel how pressurized the bottles of mauby are becoming, so you can refrigerate bottles to avoid explosions.

INGREDIENTS



for 1 gallon/4 liters

1 cup/40 grams mauby bark, loosely packed

Small amounts of roots such as licorice and/or ginger, and/or spices such as cinnamon, star anise, clove, or allspice (don't be afraid to experiment!)

Pinch of salt

2 cups/430 grams . (or more) sugar

1 cup/250 milliliters of a previous batch of mauby, water kefir, ginger bug, or other active starter, or even a pinch of yeast

PROCESS

Simmer the mauby bark and any additional roots or spices in about ½ gallon/2 liters of water for at least ½ hour, or as long as 1 hour or more, to make a flavor concentrate.

Strain the mauby and spice decoction into the fermentation vessel.

Add the salt and sugar, dissolving in the hot liquid.

Add cold water to bring total volume to 1 gallon/4 liters. (It will take more than ½ gallon because some of the original ½ gallon you started with will have evaporated or absorbed into the bark and spices.)

Add the starter. Stir well, cover to protect from flies, and ferment for a few days.

Stir a few times each day.

Once it seems to be getting bubbly (generally faster in a warm climate or with a vigorous starter), bottle it. Be sure to save some in a jar that will become the starter for your next batch! Transfer the rest into sealable plastic bottles so you can feel the pressure and gauge the level of carbonation.

Ferment the starter jar and plastic bottles overnight or for a couple of days, until the bottles feel pressurized.

Refrigerate the mauby and enjoy cold.

Starter can be stored in the refrigerator for a year or longer.

* available in Caribbean markets and via the internet

ideally in a less-refined form such as panela or jaggery, but any sugar is fine

MRS. DING'S PAO CAI



A bowl of pao cai Mrs. Ding served to us, which featured Jerusalem artichokes (or something similar).



Mrs. Ding in her kitchen generously sharing her pickling methods with us.

We had not made any plans for our first day in China. As we wandered around the neighborhood where we were staying in Chengdu to get our bearings, I noticed some sausages hanging to cure outside a street-level apartment window, and I stopped to photograph them. Mrs. Ding saw me photographing her sausages and came out to talk to us. She ended up inviting us for lunch, showing us all her fermentation projects, and teaching us how she makes them.

Pao cai is a Chinese style of fermenting vegetables. Its most distinctive feature is that it involves a perpetual brine. My first exposure to pao cai was in Mrs. Ding's home. Her pao cai brine was years old. Once the brine is mature, veggies ferment in it very quickly. She told us that the ones she fed us, which were complex and delicious, had been in the brine for only about 12 hours. However, the first batch with a fresh brine takes much longer to develop its flavor—from one to two weeks, depending on the environment.

The following recipe is a guideline to get you started. However, every batch we tried was a little different, so feel free to experiment by omitting or adding ingredients. I've been adding a little dried licorice root to my brine, which is great and really different.





1 to 2 weeks to develop the brine and pickle the first round of vegetables, then ongoing





½-gallon/2-liter jar or another vessel

INGREDIENTS



for ½ gallon/2 liters

1 tablespoon salt



3 slices fresh ginger (or more)

2 teaspoons Sichuan peppercorns (or more)

5 dried chilies (or more)

2 black cardamom pods (or more)

1 teaspoon dried or shredded licorice (optional)

About 1 pound/ 500 grams veggies for pickling, cut into medium-sized chunks

PROCESS

Start with about 5 cups/1.2 liters of water. Mrs. Ding suggests boiling the water first. I love my spring water, so I ignore that, with fine results. I just boil about a cup of the water for ease of dissolving the malt sugar, then dilute with fresh water.

Combine the water with the salt and sugar in your vessel.

Once the brine has cooled, add the spices and the vegetables for pickling.

The first batch of vegetables should take 1 to 2 weeks to ferment, at which point they will have a crisp texture and mildly sour and richly spiced flavor. Taste periodically to monitor the evolving flavor.

Once you deem the pickles ready, remove them from the brine whenever you want to eat some. When they are gone, add more vegetables for a shorter fermentation of a day or two. The more seasoned the brine, the faster the pickling time.

Over time, the salt, sugar, and spices in the brine will diminish as they infuse the vegetables that are removed. Evaluate the flavor by tasting, and add more salt, sugar, and spices as needed.

If the brine develops a yeast layer on the surface, Mrs. Ding's technique is to add a tablespoon of strong distilled alcohol.

Mrs. Ding uses a specific type of malt sugar called ding-ding tang (see "Ding-Ding Tang" sidebar on page XXX), but maltose, malt syrup, or granulated cane sugar work fine

one or any combination of the following: radish, cabbage, onion, carrot, cucumber, or try others

big enough to easily find and remove from the brine, but with enough surface area to allow the brine to quickly penetrate

Croatia



"To me, revealing the richness of our store room is kind of entrusting you with our top secrets:)," wrote Miroslav Kis, a Croatian man who was reading my book, *The Revolution Will Not Be Microwaved*. He and his partner Karmela were avid gardeners, and he excitedly told me about Karmela's fermentations and other food preservation endeavors. Miroslav also told me about Croatian delicacies, such as a cheese called *kajmak*—made by layering the creamy, rich skins that form on scalded milk—and cured sausages called *cevapcici*. "In a word, it is still a rich tradition," he wrote.

Yet Miroslav was worried about trends he was seeing: "All these things are still alive, but much less than before. Some of the practices disappeared into factories, but much more was strangled by import business." He feared that Croatia's rich food traditions were being replaced by cheaper imported foods. A lively correspondence ensued, and in 2008 I visited Miroslav and Karmela at their home in Istria, the province in Croatia that is closest to Italy.

Miroslav and Karmela were wonderful hosts. They took me to see beautiful and interesting sights, and they introduced me to some of their friends. One day we hiked to an old, abandoned water-powered flour mill. Another day we visited a friend of theirs who lives in Motovun, a stunningly well-preserved medieval walled city with narrow cobblestone streets. But more than anything, what I remember from that trip is all the delicious food Karmela cooked.

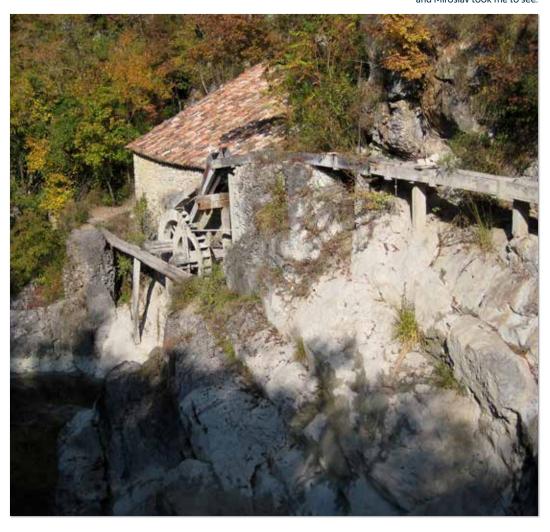
One food that Karmela introduced me to—which I absolutely loved and have eaten frequently since that visit—is *ajvar*, a rich and bright condiment spread (not typically fermented) made from roasted sweet peppers and eggplants. Karmela also introduced me to the technique of fermenting heads of cabbage whole rather than shredded, and using the big fermented leaves as



Karmela and Miroslav.

the basis for sarma, stuffed cabbage. Sadly, Miroslav died in 2016. But Karmela and I keep in touch, and she generously shared her recipes for ajvar, whole cabbage sauerkraut, and sarma.

An old abandoned waterpowered flour mill Karmela and Miroslav took me to see.



CROATIAN WHOLE SOUR CABBAGES



Cored cabbages, with the cores.

Cabbages are typically fermented whole, not only in Croatia, but throughout the Balkan states of southeastern Europe. This renders a more intense, funkier flavor. If some of the fermented cabbage is to be eaten shredded, it is shredded just before it is served.

The recipe Karmela gave me was for 55 pounds/25 kilograms of cabbage, fermented in a big barrel. I've scaled it down to 18 pounds/8 kilograms of cabbage, which can be fermented in a 5-gallon/20-liter crock or plastic bucket. Karmela does it the contemporary way, inside a plastic bag that lines the barrel. The bag is sealed, thereby preventing airflow and thus funky aerobic surface growth. In Croatia, large food-grade plastic bags are commonly available for this purpose. In many places, these may be hard to find. Moreover, some people prefer to avoid plastic. "In the past they did it without plastic bags in a barrel where they used to skim the top," writes Karmela. If you try this without a plastic bag, surface growth may develop; if so, skim it off. Karmela further adds: "In the old-fashioned way they also added some pepper grains and dry corn grains (probably to help the fermentation)."

Whole cabbages are best fermented in cool weather. Karmela suggests starting the fermentation at a warm indoor temperature for about two weeks, then moving it to a cooler cellar or outdoor location to continue fermenting more slowly for another month.

Use for the recipe *Sarma*: Croatian Stuffed Cabbage, page XXX; use leaves as wraps; or shred fermented cabbages for sauerkraut.

TIMEFRAME



6 weeks or longer

EQUIPMENT



Crock or plastic bucket with a 5-gallon/20-liter capacity

Large food-grade plastic bag (optional)

Object to weigh down cabbages

INGREDIENTS



for 18 pounds/8 kilograms

18 pounds/8 kilograms cabbage

10 ounces/320 grams salt

Peppercorns, to taste (optional)

Small handful of dried whole-grain corn (optional)

PROCESS

Remove the outer leaves and cores from the cabbages. Use a sharp knife to remove the entire conical core, which extends about halfway up the cabbages. This enables the brine to reach the center much faster than if the cores are left intact.

Fill the holes in the cabbages (where the cores were) with the salt. If there is leftover salt, dissolve it in the water (see the step below).

Pack the cabbages tightly in your vessel, salt-filled cavities facing up. Depending on the size of your cabbages and the size of your vessel, it may be tricky to fit them in. Something I have done to make them fit is to cut one or two of the cabbages into wedges that can fit among the whole cabbages. Sprinkle peppercorns and kernels of corn among the cabbages, if using.

Cover the cabbages with dechlorinated water. This should take roughly 8 quarts/8 liters of water.

The water should cover the cabbages, but if it doesn't quite cover them, don't panic. You can add a little more water if need be; however, the salt will draw more water out of the cabbages over the first few days, so the cabbages will shrink a little and the volume of water will increase. Be patient, and try to keep the exposed cabbages weighed down. If you are using a plastic bag, close the bag tightly over the submerged cabbages once they are covered, removing as much air as possible and securing by tying the bag or using a rubber band or string. If you are using a crock or bucket, use a weight (a plate may suffice) to hold the cabbages under the brine. If you are using a plastic bucket, secure the top.

Ferment for about 2 weeks at room temperature, then continue outside or in an unheated cellar for another month. If you are using the plastic bag method, do not open the bag until you are ready to eat some of the sour cabbage.

MEXICAN-INSPIRED KIMCHI



Corn, pinto bean, and quinoa tempeh.

For the 2019 Ferment Oaxaca event, my presentation was "Cross-Cultural Fermentation: Kimchi, Dosas, Koji, and More Using Corn and Other Local Ingredients." In preparation, I experimented at home using corn in all of these ferments and more, with great success. One of the best was tempeh made with corn, pinto beans, and quinoa, as pictured here.

I arrived in Oaxaca a few days before the summit. I had always heard intriguing things about Oaxaca, and I was excited to finally see and experience it. The morning after I arrived, I went to Mercado Benito Juárez, a vast indoor food market. The market is a maze in the center of the city, filled with hundreds of small vendors. My mission was to assemble ingredients for a Mexican-style kimchi. The major concept I had premeditated was to use fresh masa

PEANUT BUTTER AND KIMCHI SANDWICHES

When I was served peanut butter and kimchi sandwiches for the first time, I was quite surprised. Although the combination was not an obvious one to me, I shouldn't have been surprised, because peanut butter can pair well with almost anything. Peanut butter is a perfect contrasting base for kimchi, and together they make a delightful sandwich. In my own kitchen, I make open-faced sandwiches on whole grain bread, and it's one of my favorite snacks. Try kimchi with other nut and seed butters as well. You can't go wrong.





My Oaxacan kimchi with chapulines and pineapple.

dough (ground nixtamalized corn) as the basis for a spice paste. It was easy to find that in the market; it was also easy to find the spices we wanted, and the veggies. *Chapulines*—crunchy spiced grasshoppers that are widely eaten in some parts of Mexico—and pineapple were both abundant at the market, and they more or less suggested themselves. We bought some of each, the chapulines being almost exactly analogous to using tiny dried shrimp in Korean kimchi.

I offer this not so much as a recipe to be followed, but rather as an example of how to substitute what is available and abundant for ingredients that are more typically used. After I made the chapulín kimchi, I visited my friends Daniel and Paulina at their business, Suculenta, and they gave me a taste of their delicious kimchi made with *chicatana* ants.



My friends Paulina and Daniel's kimchi with chicatana ants.

MEXICAN-INSPIRED KIMCHI





A few days to 1 week





Crock, wide-mouth jar, or another vessel with a capacity of at least ½ gallon/2 liters

INGREDIENTS



for ½ gallon/2 liters

3 pounds/ 1.5 kilograms vegetables



A few chilies, any type, fresh or dried, for moderate spice; more for spicier

About 4 tablespoons/ 70 grams masa

- 1 garlic head (or more!)
- 4 tablespoons (or more) grated fresh ginger
- 1 pineapple
- 1 large or 2 small onions and/or bunches of scallions, coarsely chopped
- 4 tablespoons/20 grams (or more!) chapulines (optional)

PROCESS

Coarsely chop the vegetables and place in a bowl or pot. Salt the vegetables generously as you shred them.

Add just enough water to cover the vegetables, then set a plate on top of them to keep them submerged. Leave the vegetables submerged in brine on the kitchen counter for about 24 hours.

If you are using dried chilies, rinse them and cover them with a little water to allow them to hydrate for at least a few hours (or up to 24 hours). When you are ready to make the spice paste, remove the chilies from the soaking water, and use the soaking water as some of the water for the next step. If you are using fresh chilies, skip this step.

Make the paste. In a small saucepan, mix the masa with about 1 cup/250 milliliters of cold water (including any chili-soaking water). Stir well to break up the masa in the water, then gently heat at a moderate temperature, stirring constantly to prevent burning. Cook for a few minutes as the mixture thickens into a starchy, gooey paste. It should be thick, but still runny. If it seems too thick, add a little more water and stir well. Remove the masa paste from the heat and leave it to cool.

Mince the chilies with their seeds. Peel and coarsely chop the garlic.

Mix the chilies, garlic, and ginger into the masa paste and stir until well combined.

Drain the brine off the vegetables. Really let it drain, and even press lightly to force water out. Taste the vegetables for saltiness. That initial salting mostly pulls water out of the vegetables, but not much of it absorbs into them. If you cannot taste salt, add 1 to 2 teaspoons salt to the spice paste. In the unlikely event that the vegetables are too salty, rinse them.

cabbage and/or radishes and/or others

Prepare the pineapple. Remove the peel and core, reserving them for tepache (Tepache, page xxx). Cut the sweet, tender flesh into small pieces.

Combine everything together. Place the drained vegetables in a large mixing bowl. Add the spice paste and mix to distribute it. Add the onions, pineapple, and chapulines, if you are using them. Mix everything together well.

Pack the kimchi into the vessel. Pack it tightly, pressing down until the paste or liquid rises to cover the vegetables. Weigh down the vegetables to keep them submerged. If you're using a jar, leave a little space for expansion.

Ferment in a visible spot in the kitchen. If you are using a sealed jar, be sure to loosen the top to relieve pressure each day for the first few days. While you are there, use your (clean!) fingers to push the vegetables back under the brine, and after a few days taste the kimchi. As the days pass it will be less sweet and more sour. When making a kimchi with fruit, I like to eat it while the fruit still has some sweetness, so I can enjoy all the contrasting flavors. In this case, I would ferment it no longer than a week—probably less.

Once it tastes ripe to you, move it to the refrigerator.

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Cultured Pickle Shop



In my travels, I have had the opportunity to visit many small- and medium-sized fermentation businesses. Whether they are making kraut or working in other realms of fermentation, the people behind these enterprises are fermenting for their livelihood, day in and day out. I always learn from them.

I have watched quite a few small businesses start and succeed. Some have stayed small—just one or two people, or a few employees—while others have expanded into national brands, then sold their brands to bigger companies. I have seen businesses start with great dreams, then crash beneath the weight of harsh regulatory and financial realities. I have seen privately owned enterprises transition to worker-ownership. And I have met some people who are committed to being artisans more than business people; people without grander entrepreneurial ambitions who simply want to earn a living with their skill.

I have come to admire so many different producers, at different scales, almost everywhere in the world I have visited. I mean none of them any disrespect by highlighting the small producer I have visited most frequently (for well over a decade now, every time I go to the San Francisco Bay Area): the Cultured Pickle Shop in Berkeley, California. It is a tiny storefront and workshop located far from the bustle of Berkeley's busy commercial strip. There, Alex Hozven, her husband Kevin Farley, and a small team of part-time helpers make some of the most delicious and distinctive ferments I have encountered anywhere.

Alex and Kevin make wonderful sauerkraut, kimchi, and brine pickles, but they specialize in unique single batch seasonal creations. The parade of fresh vegetables and fruits in California is never ending, and they work with a wide array of fresh ingredients. They also use extremely varied techniques, many drawn from the broad palette of pickling mediums used in Japanese tsukemono.

One year when I visited them, the back window of their shop was full of daikon radishes hanging to dry in the sun—tops and all—for *takuan*, one of my favorite Japanese pickles. Another time, I arrived to the same



Brandon Jones, head brewer of the Embrace the Funk sour and wild beers program at Yazoo Brewing Company in Nashville, Tennessee, shows me his new *foeders* (giant barrels) for aging beer.



Cultured Pickle Shop ferments. Top row: asparagus kimchi; celtuce fermented with jalapeño and dill; rakkyo scallions fermented in the style of umeboshi. Middle row: takuan; Tangerine-Scarlet Queen turnip kombucha and lemon-bee pollen-mint kombucha; watermelon rind with chili and hyssop. Bottom row: carrots in a ginger and turmeric brine; kabocha squash in kasu; Tokyo turnip kasuzuke.

VEGETABLES

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Me with Alex and Kevin and their team in the Cultured Pickle Shop, 2011.

window full of persimmons hanging to dry. In my fridge, I recently found the months-buried remains of a jar of their kasuzuke, or vegetables fermented in kasu, the Japanese name for sake lees, the solid by-product of sake making (see "Kasu: Sake Lees" on page xxx). The kasuzuke in my fridge is celeriac, sliced paper-thin and bathed in a paste of sweet-salty kasu, earthy from a year of slow enzymatic breakdown. (See "Kasuzuke" on page XXX for Alex and Kevin's guidance for preparing it.)



Alex and Kevin's creations are playful and visionary. They blend sometimes unexpected vegetables, fruits, herbs, seasonings, and pickling mediums, consistently producing ferments with flavors and textures that are compelling and well balanced. From watching them, talking with them, and tasting with them in the shop, it is obvious how much attention they pay to that most important fermentation variable: time. Frequent tasting is part of their routine, and they maintain an ongoing dialogue about the development and readiness of in-process batches. They sometimes harvest part of a batch and leave the rest fermenting to see how it develops further. I've tasted some very earthy, very aged ferments they had squirreled away.

Beyond vegetables, Alex and Kevin make exceptional kombuchas. They leave tea and herbs in the fermenting

kombucha, so their mothers have lots of other botanical ingredients bound up in them. Then they mix freshpressed fruit and vegetable juices in with the kombucha for a secondary fermentation. A turnip juice kombucha I tried there was perhaps the most delicious kombucha I have ever had. In recent years, they have transformed the shop into a tiny restaurant with Rice & Pickles lunch service on the weekends, showcasing their pickles with their impeccable pairing sense and design aesthetic.

VEGETABLES 79

From Sandor Katz—New York Times bestselling author of The Art of Fermentation, and the world's most respected advocate of all things fermented—comes his first new cookbook in nearly a decade; destined to become a modern classic

For the past two decades, Sandor Katz has traveled the world to both teach and learn about the many fascinating and delicious techniques for fermenting foods. In his latest book, Sandor Katz's Fermentation Journeys—a long-awaited follow up to The Art of Fermentation, which has sold over half a million copies and been translated into more than a dozen languages— he explores the people, places, and ferments from around the globe that have inspired his life's work.

This cookbook goes far beyond general instructions and examines the transformative process of fermentation through detailed descriptions of traditional techniques, while celebrating local customs and ceremonies that surround particular ferments.

With photographs from Sandor's own travels, the book features over 60 recipes for global ferments, including:

- Chicha de jora (Peru)
- Saké by the Bodaimoto Method (Japan)
- Doubanjiang (China)
- Efo riro spinach stew (Nigeria)
- Whole sour cabbages (Croatia)
- Chucula hot chocolate (Colombia)

Sandor Katz's Fermentation Journeys reminds us that the magical power of fermentation belongs to everyone, everywhere. Perfect for adventurous foodies, armchair travelers, and fermentation fanatics who have followed Katz's work through the years—from Wild Fermentation to The Art of Fermentation to Fermentation as Metaphor—this book reflects the enduring passion and accumulated wisdom of this unique man, who is arguably the world's most experienced and respected fermentation advocate.

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" A FERMENTATION MASTER "

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"THE HIGH PRIEST OF FERMENTATION THEORY"

The Guardian

"SANDOR KATZ IS THE O.G.

Rene Redzepi, chef, Noma



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