

Fermented Foods Guide

The fermentation of foods has a long history. It was primarily used as a means of preserving food before refrigeration was available (i.e. for the vast majority of human history!) However, our ancestors also intuitively knew that fermenting foods made them more digestible and nutritious, and consuming fermented foods helped them stay healthy and strong.

Modern science has revealed that the primary benefit of eating fermented foods comes from the probiotic organisms they contain. Probiotics (“pro” = for, “biotic” = life) are live microorganisms that are beneficial to humans. Studies suggest that consuming probiotic organisms have a wide range of positive effects, including reducing inflammation, treating diarrhea and constipation, improving the immune system, minimizing or reversing lactose intolerance, and even reducing anxiety and improving cognitive function.

Health Benefits of Fermented Foods

The microorganisms that ferment food produce alcohol, lactic acid and acetic acid. These natural chemicals preserve the food by retaining nutrients and preventing spoilage.

Fermentation not only preserves nutrients, it also breaks them down into forms that are more easily digested. Dairy products are a good example. As we discussed in the manual, many adults don’t produce lactase, the enzyme needed to digest the sugar in milk (lactose). But Lactobacilli - the bacteria present in fermented dairy products - transforms lactose into lactic acid, which is much easier for humans to digest.

Fermentation even creates new nutrients that weren’t originally present in the food. Microorganisms produce B vitamins, including folates, riboflavin, niacin, thiamin and biotin. Lactobacilli also produce omega-3 fatty acids, which are essential for cell membrane and immune system function.

Basic Equipment and Guidelines for Fermentation

All types of food have some tradition of fermentation, but fruits, vegetables and dairy products are the most commonly fermented foods and the ones we will discuss in this guide.

Fermenting foods at home is quite simple, and requires only a few ingredients, some basic equipment, and time. At a bare minimum, you will need:

- A wide-mouth glass or ceramic container
- Filtered or boiled (to remove the chlorine) water
- Sea salt or kosher salt
- Fresh vegetables or fruit

If you'd like to ferment dairy products, you will also need some kind of starter. For yogurt, this can be as simple as one or two tablespoons of store-bought yogurt. For kefir, you'll need to obtain "kefir grains" (not actually grains, but for some reason that's what they're called). I'll make some suggestions for how to do this below when we discuss fermented dairy in more detail.

The basic process involves placing whole, chopped, sliced or grated fruits or vegetables in a brine of salt and water and leaving them at room temperature to allow the beneficial microorganisms to proliferate. Salt inhibits many harmful bacteria, but it permits the growth of *Lactobacilli*, the type of bacteria that plays an important role in fermentation. Salt also draws water out of the vegetables, which helps keep them crunchy.

Whey (the liquid that remains after milk has been curdled or strained) is used as a starter in many recipes as an alternative to salt. This is because whey already contains *Lactobacilli*, and thus can speed up the process of fermentation. This is convenient, but those with dairy intolerance or allergy may wish to avoid whey as a starter and stick with salt.

Another alternative to salt as a starter for fermented vegetables is a "vegetable starter culture," which you can obtain from the online store Cultures for Health or from your local natural food store. Like whey, these starter cultures already have *Lactobacilli* in them, which makes it possible to ferment the vegetables without using salt.

Many coastal traditional cultures use seaweed as a starter because of its high sodium content. Seaweeds are also very nutrient-dense and one of the only dietary sources of iodine.

The fermentation time for each item depends on a number of factors, including the room temperature, type of starter and quantity of salt used, and the nature of the fruit, vegetable or dairy product you're fermenting. In general, the longer you ferment something, the more lactose

(sugar) is consumed and the more sour it will be. So, with kefir, if you'd like it to be completely free of lactose — because you don't digest it well — you'll probably want to ferment the kefir for at least 24 hours, and up to 36 hours. On the other hand, if you're okay with lactose and you prefer a sweeter kefir, you may only want to ferment it for 12 hours.

Equipment

It's important to use the right type of fermentation vessel. A key principle of successful fermentation is that the vegetables or fruit must stay submerged beneath the liquid at all times. This prevents mold from spoiling and is the difference between fermented — and simply rotten — food.

You'll need a large ceramic or glass container with a wide-mouth that you can fit a cap or plate on top of such that you can press down on it to keep the vegetables submerged beneath the brine at all times. You'll need to check back regularly throughout the fermentation process, and may have to continue pressing down on the cap or lid to keep the vegetables submerged. Placing a heavy object like a rock or a jar filled with water on top of the cap can be helpful here, because it will ensure that the vegetables remain in the brine.

You can certainly use any glass or ceramic container you have on hand that fits this description. That said, if you plan to ferment food in any significant quantity one of the best investments you can make is to purchase a special container designed specifically for fermentation. These have an airlock set-up that ensures that the vegetables stay submerged in the brine at all times.

You can buy these at the online store Cultures for Health, and they may also be available locally. A good starter option is the “Fermented Vegetable Master”, which is a one-gallon glass jar with airlock that currently sells for about \$12. If you plan on making larger quantities of sauerkraut and fermented vegetables, the Harsch Fermenting Crocks are a worthy investment. We've got one at home and can make massive batches of sauerkraut and other fermented veggies that last a long time.

Resources

BOOKS

The information in this guide is enough for people that want to do basic fermentation. If you get really interested in it and want to branch out and learn more, I'd recommend the following books:

- *Wild Fermentation: The Flavor, Tradition & Craft of Live-Cultured Food*, by Sandor Ellix Katz
- *Nourishing Traditions: The Cookbook That Challenges Politically Correct Nutrition and the Diet Dictocrats*, by Sally Fallon & Mary Enig
- *Home Cheese-Making*, by Ricki Carroll
- *Making Great Cheese*, by Barbara Ciletti
- *The Joy of Home Winemaking*, by Terry Garey
- *The Vinegar Book*, by Emily Thacker
- *The Joy of Pickling*, by Laura Ziedrich

EQUIPMENT AND STARTERS

- CulturesForHealth.com: a great source for fermentation vessels, starters, pre-made fermented foods, books and other resources related to fermentation.
- TheHappyHerbalist.com: another source for everything related to fermentation
- Gemcultures.com: a great source for starters and cultures needed for fermentation

WEBSITES (WITH FERMENTED FOOD RECIPES)

- **Nourished Kitchen**
- **Paleo Leap**
- **Nourishing Days**
- **Kelly the Kitchen Kop**
- **Food Renegade**
- **The Herbangardener**
- **Stacking Functions Garden**

Recipes

Vegetable ferments

GUNDRU

Gundru, also known as kyurtse, is a strong and delicious pickle made from vegetable greens. This is a traditional fermenting method of the Newar people of Nepal. What distinguishes this ferment is that the sole ingredient is the vegetable itself, greens. No salt or any other ingredient is required. Try using turnip greens. A quart (1 liter) requires the greens of about eight plants. Radish greens, mustard greens, kale, or collards — or any hardy green in the Brassica family (not lettuce) would work.

TIMEFRAME: Weeks

SPECIAL EQUIPMENT:

- Quart-size (liter) jar
- Screw-top for jar
- Rolling pin

INGREDIENTS (for 1 quart/liter):

- Greens, about 2 pounds/1 kilogram

PROCESS:

1. Start on a sunny day. Set greens in the sun for a few hours until they wilt.
2. Use a rolling pin on a cutting board or other hard surface to smash and crush the wilted greens. This is to encourage the juices out of the leaves, but you don't want to lose any of the potent juice.
3. Stuff the leaves and any juice oozing out into a jar. Use whatever implements are at hand, including your fingers, to compress the greens into the jar. Use pressure to force more crushed greens in, and this will force water out of them. You may be surprised how a great volume of greens can be squeezed into a small jar. Keep stuffing them in until the jar is full and the greens are covered with liquid. The liquid will be strongly pungent vegetable juice.
4. Screw the lid on the jar and place it in a warm, sunny place for at least 2-3 weeks. Longer is fine.
5. After a couple of weeks, open the jar and smell the greens. They should be pungent and sharp. *Gundru* packs a lot of flavor. Taste them. You can cut them up and serve as pickles, just like this.
6. Or, you can dry them and use *Gundru* to flavor soups, as it is used throughout winter in Nepal. To dry *Gundru*, remove fermented leaves from the jar and hang them from a line or spread them in the sun. Make sure greens are completely dry before putting them into storage or they will mold.

Source: *Wild Fermentation*

SAUERKRAUT

Sauerkraut originates from Germany and consists of lacto-fermented cabbage. Cabbage is probably the most often lacto-fermented vegetable out there, probably because the end result tastes so good.

SPECIAL EQUIPMENT:

- quart-sized, wide mouth mason jar
- wooden pounder or meat hammer

INGREDIENTS:

- 1 medium cabbage, cored and shredded
- 1 TB caraway seeds
- up to 1 T sea salt
- 4 TB whey (if not available, use an additional 1 TB sea salt)

PROCESS:

1. In a large, sturdy bowl, mix cabbage with caraway seeds, salt and whey.
2. Pound with a wooden pounder or a meat hammer for about 10 minutes to release juices.
3. Place in a quart-sized, wide-mouth mason jar and press down firmly with a pounder or meat hammer until juices come to the top of the cabbage. The top of the cabbage should be at least 1 inch below the top of the jar.
4. Cover tightly and keep at room temperature for about 3 days before transferring to the refrigerator. The sauerkraut may be eaten immediately, but it improves with age.

Source: The Nourishing Cook

CORTIDO

This Latin American Sauerkraut is absolutely delicious.

SPECIAL EQUIPMENT:

- large bowl
- wooden pounder or meat hammer
- two quart-sized, wide mouth mason jars with tight sealing lids

INGREDIENTS:

- 1 large cabbage, cored and shredded
- 1 cup carrots, grated
- 2 medium onions, quartered lengthwise and very finely sliced
- 1 TB dried oregano
- 1/4 - 1/2 tsp red pepper flakes
- 1 TB sea salt
- 4 TB whey (if not available, use an additional 1 tablespoon salt or package of culture starter)

PROCESS:

1. In a large bowl mix cabbage with carrots, onions, oregano, red chile flakes, sea salt and whey (if using).
2. Pound with a wooden pounder or a meat hammer for about 10 minutes to release juices.
3. Place in 2 quart-sized, wide mouth mason jars and press down firmly with a pounder or meat hammer until juices come to the top of the cabbage. The top of the cabbage mixture should be at least 1 inch below the top of the jars.
4. Cover tightly and keep at room temperature for about 3 days before transferring to the refrigerator.

Source: Nourishing Days

GINGERED CARROTS

So much for fermented vegetables only being a condiment; these are so delicious they may become a main dish.

SPECIAL EQUIPMENT:

- grater or food processor
- quart size, wide mouth mason jar with tight sealing lid
- pounding tool

INGREDIENTS:

- 4 cups grated carrots
- 1-2 TB freshly grated ginger (I like a lot)
- 1 TB sea salt
- 4 TB whey (or use packet of culture starter, or 1/4-1/2 cup of juices from a previous batch.)
If looking for starter, Caldwell or Body Ecology culture starters can be found online.

PROCESS:

1. In a bowl, mix all ingredients and pound with a wooden pounder or meat hammer to release juices.
2. Place in a quart-sized, wide-mouth mason jar and press down firmly with a pounder or meat hammer until juices cover the carrots. The top of the carrots should be at least 1 inch below the top of the jar.
3. Cover tightly and leave at room temperature about 3 days before transferring to the refrigerator.

Source: Kelly the Kitchen Kop

SAUERRUBEN

Sauerruben has a sweet, radish-like bite — although that will mellow out after a few weeks in the fridge.

SPECIAL EQUIPMENT:

- 1 gallon jar
- pounding tool

INGREDIENTS:

- 10 lbs turnips, topped, tipped, and washed with any bad parts cut off, but the skins left mostly intact
- 3 TB salt

- 3 TB fresh ground pepper
- culture starter packet (optional)

PROCESS:

1. Shred, grate, or finely chop your turnips (or rutabagas, if substituting). Add the salt, and mix well.
2. I let this sit on the counter for several hours or overnight (this step is in place of pounding) so that the salt can begin to draw water out of the turnips. The water contains nutrients, and these nutrients then become the substrate for the growth of the lactic acid bacteria which is what turns your turnips into sauerruben. (Steinkraus, Handbook of Indigenous Fermented Foods, p.120.)
3. After some water has been drawn out, pack the rutabaga WITH its water into a glass jar. You really want to pack it in there (use your fist or any kitchen tool), because this will help squeeze more water out. You can also use a specially-made ceramic sauerkraut crock, or a glass or ceramic bowl (anything except metal, since salt and acid can react with metal).
4. Keep the turnips submerged under the brine by placing a smaller plate on top and weighing it down with something heavy (a jug of water, a boiled rock, etc.). Or, nest a smaller jar of water inside your larger glass jar.
5. Whatever method you devise, just be sure that all traces of turnip are completely submerged in the brine. Little bits sticking up above the water line will quickly lead to a moldy situation (and if you do end up with mold, scrape off the entire top layer, but the rest underneath should be fine!). So if you need to mix up some more brine (which is just a fancy name for salt water), use the ratio of 1 tsp salt to 1 cup of water.
6. Cover the jar with a towel to keep bugs out. Leave it to ferment at room temperature until you like the taste of your sauerruben. Let your tongue be your guide to done-ness. Taste it every few days, and transfer into the fridge when it tastes the way you like it. I like mine pretty sour, so I usually leave it out for 1-2 weeks or more, depending on how warm it is in the kitchen. If the taste is right but the 'ruben is still too bitey, shove it to the back of the fridge for several weeks for it to mellow out.
7. Once in the fridge, your sauerruben will keep for many months. And when it's all gone, don't throw out the juice; it's full of beneficial Lactobacillus (lactic acid bacteria) and is said to be a very good digestive tonic. And if you like, add a little of the juice to your next batch of sauerruben as a starter.
8. Troubleshooting: If you see a white film develop on the surface of the brine, scrape off what you can each day until the 'ruben is done fermenting. Sometimes I don't get any film. Sometimes I get a fair amount. There doesn't seem to be any rhyme or reason. The film won't harm anything, but if you keep getting a lot of it day after day, it can sometimes (not always) impart an off taste to the brine. Just try to scrape it off on a regular basis (daily is nice).

Source: The Herbangardener

FERMENTED VEGETABLE MEDLEY

Vegetable combinations are a great idea when lacto-fermenting and this summer vegetable medley of cucumbers, carrots, apples and cauliflower is a great example.

SPECIAL EQUIPMENT:

- mason jar with tight fitting lid
- pounding tool

INGREDIENTS:

- 4 apples, cored and diced
- 4 cups cauliflower florets
- 4 carrots, peeled and diced
- 8 green onions, sliced thinly
- 3 TB grated fresh ginger
- 1 TB sea salt
- 1/4 cup whey, one packet of culture starter, or an additional TB sea salt - If looking for starter, Caldwell or Body Ecology culture starters can be ordered online.

PROCESS:

1. Combine the apples, cauliflower, carrots, onions and ginger together.
2. Place the mixture little by little in your fermentation jar, pounding them vigorously and sprinkling some of the sea salt as you go.
3. Make sure the mixture fills the jar up to 1 inch below the top (because of the expansion), adding more if needed, and that the extracted water covers the vegetables entirely. If not, create a brine of 2 tablespoons sea salt to 4 cups water and add it to the jar. Press the mixture until it is under the brine. Close the jar with tightly sealed lid. Place the fermentation jar in a warm spot in your kitchen and allow the mixture to ferment for 3 to 5 days.
4. Check on it from time to time to be sure that the brine covers the mixture and to remove any mold that may form on the surface.
5. A good way to know when it's ready is to taste it during the fermentation process. It's ready when you're satisfied with the taste.

Source: Paleo Diet Lifestyle

APPLE AND BEET RELISH

A near-perfect side to pan-fried pork chops seasoned with sage or to a classic roast beef, beetroot relish provides an intensity of flavor coupled with nourishing micronutrients including vitamins, minerals and antioxidants.

SPECIAL EQUIPMENT:

- grater or food processor
- mason jar or vegetable fermenter
- tool for mashing

INGREDIENTS:

- 3 large apples (about 1 1/2 pounds), cored but not peeled
- 3 large beets (about 1 1/2 pounds), peeled
- 2 star anise pods
- 1 TB whole cloves
- 1 TB unrefined sea salt
- fermented vegetable starter culture, if desired - If looking for starter, Caldwell or Body Ecology culture starters can found online

PROCESS:

1. Shred apples and beets by hand, or in a food processor.
2. Toss the shredded apples and beets together until well-combined and mixed together.
3. Add the star anise and whole cloves to the apples and beetroot, and continue to toss until the spices are evenly distributed among the shredded fruit and vegetables.
4. In a mason jar or, preferably, a vegetable fermenter, layer the apple and beetroot.
5. Periodically sprinkle unrefined sea salt or vegetable starter culture over the layers of apple and beetroot and mash with a wooden spoon or mallet to encourage the fruit and vegetables to release their juices, creating a luscious brine to encourage the proliferation of beneficial bacteria.
6. If, after mashing the apples and beets with a mallet or wooden spoon, the brine created by the salt and juice fails to completely submerge the vegetables, prepare a separate brine by dissolving 1 tablespoon unrefined sea salt in 1 quart filtered water and pour this salty mixture over the apples, beets and spices until they are completely covered. Doing so minimizes the risk of contamination by undesirable bacteria, mold and fungi.
7. Ferment in a mason jar or vegetable fermenter for a minimum of three to four days, or longer, depending on the level of warmth in your kitchen.
8. After your apple and beetroot relish has sufficiently cultured, remove it from the vegetable fermenter and gently pick out the star anise pods and whole cloves.
9. Place the apple and beetroot relish into a blender or food processor and process until smooth.

Source: Nourished Kitchen

KIMCHI

Kimchi is a very spicy and pungent Korean fermented combination of napa cabbage and radishes. Other vegetables, like cucumbers, are often used.

SPECIAL EQUIPMENT:

- fermentation jar
- pounding tool

INGREDIENTS:

- 2 heads Napa cabbage
- 2 Daikon radishes, peeled and sliced
- 5 carrots, peeled and sliced
- 1 bunch scallions, sliced
- 2-inch piece of fresh ginger, minced
- 16 garlic cloves, chopped
- 1/4 cup fish sauce
- 1/2 cup chili paste, to taste
- 1 1/4 cups sea salt

PROCESS:

1. Wash the cabbage leaves and let them soak overnight in a brine of 1 cup sea salt and 1 gallon water.
2. Once soaked, discard the soaking liquid and combine the cabbage with the radishes, carrots, scallions, ginger, garlic, fish sauce and chili paste.
3. Add the remaining 1/4 cup sea salt to the mixture and combine well.
4. Place the mixture little by little in your fermentation jar, pounding it vigorously to release the juices.
5. Make sure that the extracted water covers it entirely. If not, create a brine with ratio of 1 tablespoons sea salt to 2 cups water and add it to the mixture.
6. Press the mixture and keep it under the brine by placing a plate or a lid on top weighted down by a rock or a jug of water. Cover with a clean towel if needed to keep out fruit flies.
7. Place the fermentation jar in a warm spot in your kitchen and allow the Kimchi to ferment for 5 to 7 days.
8. Check on it from time to time to be sure that the brine covers the mixture and to remove any mold that may form on the surface.
9. A good way to know when it's ready is to taste it during the fermentation process. It's ready when you're satisfied with the taste.

Source: Paleo Diet Lifestyle

FERMENTED SALSA

Culturing our salsa allows us to keep our fresh salsa for at least several months in the fridge, and gives us a huge boost of health benefits. And it tastes wonderful!

SPECIAL EQUIPMENT:

- quart sized, wide mouth mason jar
- pounding tool

INGREDIENTS:

- 4 large tomatoes, peeled, seeded and diced
- 2 small onions, chopped
- 3/4 cup chopped chile, jalapeño, or milder pepper (seeded)
- 6-8 cloves garlic, peeled and finely chopped or pressed
- 1 bunch cilantro, chopped
- 1 tsp. dried oregano (or a good TB or two of fresh)
- juice of 1-2 lemons
- 1 TB sea salt
- 4 TB whey, packet of culture starter, or 1 extra TB salt
- 1/4 cup filtered water

PROCESS:

1. Mix all ingredients and place in a quart-sized, wide-mouth mason jar.
2. Press down lightly with a wooden pounder or meat hammer until the juice rises up; if there is not enough liquid to cover the vegetables then add a little water. The top of the vegetables/liquid should be about an inch below the top of the jar.
3. Cover with tight fitting lid and keep at room temperature for about 2 days before transferring to the fridge.
4. A note about timing: that “2 days” is a very subjective figure. It depends on a number of factors. If you use the whey (or culture starter), this process goes very quickly. If you don’t, it takes a little longer. The temperature of your kitchen is also a factor. This took 2 days in our kitchen, but we used whey.
5. How do you know when it’s done? Taste it every single day. Twice a day if it’s really warm in your kitchen. Open it up, press the vegetables down, and give them a taste. When it tastes really good, it’s done. As you can see, there is pretty much no way to get this wrong. If you use the no whey-extra salt method you’ll know it’s done when it starts to taste less salty. I don’t know that I’d let this one go too long... probably better slightly fermented than sauerkraut-level fermented.

Source: The New Home Economics

FERMENTED SALSA VERDE

Serve this salsa verde over grilled chicken or fish or as a garnish for tacos and burritos.

SPECIAL EQUIPMENT:

- mason jar with tight fitting lid
- pounding too

INGREDIENTS:

- 1 lb tomatillos, husked and halved
- 8 to 12 jalapeño or serrano peppers, seeded if desired and chopped
- cloves of 1 medium head of garlic, peeled and crushed
- juice of 1 lime
- 1 tsp unrefined coarse sea salt
- 1/2 packet vegetable starter culture dissolved in 1/4 cup warm water or 1/4 cup fresh whey - If looking for starter, Caldwell or Body Ecology culture starters can be ordered online.

PROCESS:

1. Toss tomatillos, peppers, garlic, lime juice, salt and starter culture or fresh whey into a food processor or blender and process until smooth, adjusting for seasoning as necessary.
2. Transfer the sauce to a mason jar or a vegetable fermenter and close with a tightly fitting lid.
3. Allow to ferment at room temperature for three to five days before transferring to the refrigerator.

Source: Nourished Kitchen

CUCUMBER RELISH

This dill pickle relish recipe produces an old-fashioned, fresh, dill pickle relish that will last up to a couple of months in the refrigerator.

SPECIAL EQUIPMENT:

- quart-sized, wide mouth jar with tightly fitting lid

INGREDIENTS:

- 4-5 pickling cucumbers
- 2 TB fresh dill (or 2 tsp. dried dill)
- 1 TB sea salt
- 4 TB whey drained from yogurt. If not available, use an extra 1 TB salt or package of culture starter

PROCESS:

1. Wash cucumbers well and chop or grate them in a food processor or by hand. Stir in remaining ingredients.
2. Place mixture in a quart-sized, wide-mouth mason jar. Using a kitchen mallet or wooden spoon, squeeze the grated cucumbers down and allow liquid to cover them. If there's not enough liquid to cover, add filtered water to get the job done. The top of the liquid should be at least one inch below the top of the jar (that's to make room for all that glorious fermentation).
3. Cover tightly and keep at room temperature for about 2 days (or up to 5 days) before transferring to refrigerator. You can taste the relish during the fermentation process to know if it's ready or not.

Source: Food Renegade

DILL PICKLES

Favorite traditional condiment.

SPECIAL EQUIPMENT:

- quart-sized, wide mouth jar with tightly fitting lid

INGREDIENTS:

- 4-5 pickling cucumbers or 15-20 gherkins
- 1 TB mustard seeds
- 2 TB fresh dill, snipped
- 1 TB sea salt
- 4 TB whey (if not available, use an additional 1 tablespoon salt)
- 1 cup filtered water

PROCESS:

1. Wash cucumbers well and place in a quart-sized wide mouth jar.
2. Combine remaining ingredients and pour over cucumbers, adding more water if necessary to cover the cucumbers. The top of the liquid should be at least 1 inch below the top of the jar.
3. Cover tightly and keep and keep at room temperature for about 3 days before transferring to cold storage.
4. For pickle slices simply cut cucumbers into 1/4 inch slice and cut back the fermentation time to 2 days instead of 3.

Source: Nourishing Days

PICKLED JALAPEÑOS

This is a probiotic, fermented version of conventional pickled jalapeños that you'll find on grocery store shelves. Best used with a moderate hand, these are a spicy and fiery condiment.

SPECIAL EQUIPMENT:

- One quart vegetable fermenter or mason jar

INGREDIENTS:

- 1 quart fresh jalapeño peppers
- 1/2 onion, sliced
- 3 - 4 cloves garlic
- 3 TB unrefined sea salt
- 1 quart filtered water

PROCESS:

1. Gently wash and clean the jalapeños, discarding any bruised, marred or mushy peppers.
2. Add the peppers, garlic and onions to your vegetable fermenter or mason jar.
3. Combine unrefined sea salt and filtered water to create a brine and pour over the vegetables.
4. Ensure that vegetables are below the water-line. Cover with tightly fitting lid.
5. Culture at room temperature until the jalapeños change color from deep green to an olive green. This usually takes approximately 5 to 7 days depending on the temperature of your home.
6. When finished culturing, transfer to the refrigerator for storage.

Source: Nourished Kitchen

FERMENTED CHILI SAUCE

Seasoned with fresh garlic this fermented hot chili sauce is rich with flavor, bright and fiery. Traditionally, all hot chili sauces were prepared through fermentation – and many of the world’s most renowned and well-loved sauces are still prepared through this time-honored technique of combining hot chilies with salt and allowing it to sit and brew away.

SPECIAL EQUIPMENT:

- food processor (optional)
- mason jar
- fine mesh sieve

INGREDIENTS:

- 3 pounds fresh chili peppers (any chili will do - cayenne peppers, jalapeños, Scotch bonnets, Holland chilies, serranos etc.)
- 4 to 6 cloves garlic, peeled and minced
- 2 TB unrefined cane sugar, optional
- 2 tsp unrefined sea salt
- vegetable starter culture dissolved in 1/4 cup water, or 1/4 cup fresh whey - If looking for brand of starter culture, try Caldwell’s or Body Ecology brands

PROCESS:

1. Snip the stems from the chilies, but leave their green tops intact.
2. Combine all ingredients in a food processor, or mince by hand, until chopped to a fine pasty texture.
3. Spoon the chili paste into a glass mason jar and allow it to ferment, covered, at room temperature for five to seven days.
4. After the chili paste has bubbled and brewed for about a week, set a fine-mesh sieve over a mixing bowl and spoon the fermented chili paste into the sieve.
5. With a wooden spoon, press the chili paste into the sides of the sieve so that the sauce drips from the sieve into the waiting mixing bowl.
6. Once you’ve pressed and pushed the chili sauce through the sieve, pour the sauce from the bowl into jar or bottle and store in the refrigerator. The sauce will keep for several months.
7. Don’t discard any remaining chili paste; rather, use it to season stir-fries, eggs and other dishes.

Source: Nourished Kitchen

POI

For centuries, taro has been a nutritious staple food for Hawaiians and many other Polynesian peoples throughout the Pacific Rim. Poi is an acquired taste, but quickly makes converts of those who persist.

SPECIAL EQUIPMENT:

- roasting pan
- wooden pounder or meat tenderizer

INGREDIENTS:

- 2 pounds taro root (or yams or sweet potatoes)
- 1 TB sea salt
- 1/4 cup whey (homemade from raw milk or yogurt) or use packet of culture starter

PROCESS:

1. Preheat oven to 300 degrees. Poke several holes in the taro with a fork.
2. Bake them in the oven and bake for 2 hours or until soft.
3. Let cool, then peel and mash with salt and whey (a sauerkraut pounder or meat tenderizer works great).
4. Leave this mixture in a bowl and leave out at room temperature, covered with a dishtowel, for 24 hours. Store in an airtight container in the refrigerator.

Source: Cheeseslave

Condiments

HORSERADISH

This homemade horseradish is strong and potent, and due to volatile compounds within the horseradish root that are released when it's processed, it will make your eyes tear up, but push yourself through the tears and you'll prepare a lovely, probiotic condiment that can keep for months in the fridge. Serve it with roast meats or stir it into a homemade mayonnaise.

SPECIAL EQUIPMENT:

- food processor

INGREDIENTS:

- about 1 cup peeled and chopped fresh horseradish root
- 1 1/2 tsp unrefined sea salt
- 1 packet starter culture for fresh vegetables such as Caldwell's or Body Ecology
OR 1/4 cup fresh whey
- 2 TB to 1/4 cup filtered water, as needed

PROCESS:

1. Combine peeled and chopped fresh horseradish root, unrefined sea salt and starter culture into the basin of a food processor.
2. Pulse for about one minute to combine ingredients.
3. Add two to four tablespoons filtered water to the ingredients and process for three to four minutes until a smooth paste forms, adding additional water as necessary.
4. Take a breath, walk outside, 'cause your eyes will burn and tears will stream down your cheeks. It's worth it though. Promise.
5. Spoon the homemade horseradish mixture into a small jar, adding additional water to completely reach the top of the jar. Cover it loosely with a lid.
6. Allow to ferment in a warm location in your kitchen for at least three days and up to a week, before placing in the refrigerator.
7. The homemade horseradish will stay good in your fridge for several months.

Source: Nourished Kitchen

MUSTARD

When you realize how super easy it is to make your own mustard, you won't be picking one up from the supermarket shelf again. Plus you can tailor it to exactly how you like it.

SPECIAL EQUIPMENT:

- pint sized jar or two 8-ounce jars

INGREDIENTS:

- 1 1/2 cup yellow mustard seeds
- 1/2 cup filtered water
- 2 TB whey or packet of culture starter
- 2 tsp sea salt
- juice of 1 lemon
- 2 tsp honey (less or more)
- 1 tsp turmeric powder
- 2 TB whole black mustard seeds

PROCESS:

1. Soak the yellow mustard seed overnight. Drain and grind into a paste.
2. Mix in the turmeric, whey, sea salt, honey, lemon juice.
3. Add the water and blend until you obtain the desired consistency.
4. Add the whole black mustard seeds.
5. Place in a pint-sized jar or two 8 oz jars, with the top of the mustard at least 1 inch below the top of the jar. Cover the jar tightly.
6. Leave it at room temperature for about 3 days and then refrigerate.

Source: Heart of the House

KETCHUP

Deeply robust with the rich-sweet flavor of concentrated tomato, this ketchup differs from the cloying sweet varieties you find in the grocery store. Allspice and cloves, traditional inclusions often omitted in most store-bought varieties, bring a level of depth that would be otherwise absent.

SPECIAL EQUIPMENT:

- one-pint mason jar

INGREDIENTS:

- 2 cups tomato paste, preferably homemade
- 1/4 cup raw honey, maple syrup or whole unrefined cane sugar
- 1/4 cup plus 2 TB fresh whey or one packet vegetable starter culture, divided
- 2 TB raw apple cider vinegar, plus extra for thinning the ketchup, if desired
- 1 tsp unrefined sea salt
- 1 tsp allspice
- 1/2 tsp ground cloves

PROCESS:

1. Spoon tomato paste into a large mixing bowl and fold in raw honey or other natural sweetener of choice.
2. Whisk in one-quarter cup fresh whey or vegetable starter culture into the sweetened tomato paste along with apple cider vinegar, sea salt, allspice and cloves. Continue whisking these ingredients together until the paste is smooth and uniform.
3. Spoon the homemade ketchup into a mason jar, top with remaining two tablespoons fresh whey or vegetable starter culture, cover loosely with a cloth or lid and allow the ketchup to sit at room temperature, undisturbed, for three to five days.
4. After three to five days, uncover the homemade ketchup and give it a thorough stir before transferring to the refrigerator. Naturally fermented homemade ketchup will keep for several months in the refrigerator.

Source: Nourished Kitchen

FISH SAUCE

Thai fish sauce, or fermented fish sauce, is a staple throughout southeast Asia (not just Thailand). It makes a great substitute for soy sauce.

SPECIAL EQUIPMENT:

- wide-mouth, quart-sized mason jar
- wooden pounder or meat hammer
- mesh strainer

INGREDIENTS:

- fish, small, including heads (1 1/2 pounds)
- 3 TB sea salt
- 2 cups filtered water
- 2 cloves garlic
- 2 Bay leaves
- 1 tsp whole peppercorns
- lemon rind, organic if possible (from 1/2 lemon)
- 2 TB whey, or packet of vegetable starter -- Caldwell or Body Ecology culture starters are two recommended brands

PROCESS:

1. Cut up fish into small pieces and place in wide-mouth mason jar.
2. Cut up the lemon rind into small pieces.
3. Add sea salt and press down with a wooden pounder or meat hammer.
4. Add remaining ingredients to jar and stir together.
5. Add additional filtered water to cover fish if needed — water should cover fish but be sure to leave at least an inch from the top of the jar.
6. Cover tightly and leave at room temperature for about 3 days.
7. Transfer to refrigerator and let sit for several weeks.
8. Strain liquid through a strainer (you may use cheesecloth if you like) and bottle the liquid (old soy sauce bottles are great for this). Discard the solids.
9. Store fish sauce in the fridge. It will keep for several months.

Source: Cheeseslave

Fruit

PRESERVED LEMONS

Preserved lemons are traditionally used in Moroccan dishes, and make an excellent condiment. You'll love all the uses you'll find for the rind, which becomes edible during the preservation process.

SPECIAL EQUIPMENT:

- 1 gallon vegetable fermenter or mason jar

INGREDIENTS:

- 10 lbs organic Meyer lemons
- Celtic Sea Salt or Real Salt

PROCESS:

1. Rinse and scrub the lemons well so as to remove any potential residue adhering to the lemon rind.
2. Slice the lemon as though you are going to quarter it, but leave all quarters connected on one end.
3. Sprinkle a little bit of salt on the interior of the lemon, and place it in your jar.
4. When you've made a layer of lemons, sprinkle a teaspoon or two of salt over the top of the layer.
5. Use a wooden spoon and pound down the lemons until they release their juice.
6. Continue cutting, salting, layering, salting and pounding down the lemons until your jar is full.
7. Add another layer of salt and pound the lemons until the juice of the lemons covers the fruit. If more juice is needed, additional extra lemons can be juiced to add more juice to the jar.
8. Cover the jar and shake to release any trapped air bubbles, then loosen the lid so that air can escape.
9. Leave at room temperature for 1 day, then check to make sure the lemons are completely submerged in juice. Add juice if needed, then cover again loosely.
10. Store at room temperature for six more days. Shake the jar at least once per day.
11. If ready, transfer to the refrigerator for storage. May be left for an additional week to allow for fermentation if necessary.

Source: Nourished Kitchen

PEACH CHUTNEY

When we think of lacto-fermentation, we often think of vegetables being fermented, but fruits are also a great choice and some very interesting combinations can be prepared this way. Here we use peaches, but feel free to use any of your favorite fruits or those that are in season. Pears, plums and apples are great choices too.

SPECIAL EQUIPMENT:

- 2 quart mason jar or vegetable fermenter

INGREDIENTS:

- 16 pears, cored and chopped coarsely
- 2 cups raisins
- 2 cups pecans, chopped
- 1 TB sea salt
- 1/4 cup whey or package of vegetable culture starter, or an additional 1 TB sea salt
- juice of 5 lemons
- 4 onions, finely chopped
- 4 TB grated fresh ginger
- 4 hot peppers, fresh or dried, chopped

PROCESS:

1. Combine the chopped pears with the raisins, pecans, sea salt, lemon juice, onions, ginger and hot peppers together.
2. Place the mixture little by little in your fermentation jar, pounding it vigorously to release the juices.
3. Make sure the mixture fills the jar up to no more than 1 inch below the top (because of the expansion) and that the extracted water covers the mixture. If not, create a brine of filtered water with a few pinches of salt to cover the mixture.
4. Press the vegetables and keep them under the brine by placing a plate or a lid on top weighted down by a boiled rock, plate, or a jug of water. Cover with a clean towel if needed to keep out fruit flies.
5. Place the fermentation jar in a warm spot in your kitchen and allow the chutney to ferment for 2 to 4 days.
6. Check on it from time to time to be sure that the brine covers the vegetables and to remove any mold that may form on the surface.
7. A good way to know when it's ready is to taste it during the fermentation process and move it to the refrigerator when you're satisfied with the taste.

Source: Paleo Diet Lifestyle

Beverages

KOMBUCHA

Kombucha is a sour tonic beverage. In Russia, where it has enjoyed long popularity, it's referred to as "tea kvass". Kombucha is sweetened by black tea and cultured with a "mother", a gelatinous colony of bacteria and yeast. The mother ferments the sweet tea and reproduces itself, like kefir grains.

The trickiest part of making kombucha is finding a mother. If you live in the U.S., you can order one, along with a special kombucha fermentation vessel with a spigot, from HappyHerbalist.com. If you live elsewhere, try asking at a local health food store or check the Worldwide Kombucha Exchange (www.kombu.de) for a mother. G.E.M Cultures (gemcultures.com) also has them.

Most people are surprised to see sugar included in this recipe. However, keep in mind that the sugar will be consumed by the yeast and bacteria in the kombucha mother during the fermentation process, so that very little remains in the finished product.

TIMEFRAME: about 7 to 10 days

INGREDIENTS:

- 1 quart/liter water
- 1/4 cup sugar
- 1 tablespoon loose black tea, or 2 tea bags
- 1/2 cup mature acidic kombucha
- Kombucha mother

PROCESS:

1. Mix water and sugar and bring to a boil in a small cooking pot.
2. Turn off the heat; add tea, cover, and steep about 15 minutes.
3. Strain the tea into a glass container. It's best to use something with a wide bottom - kombucha needs adequate surface area and it's best if the diameter of the container is greater than the depth of the liquid. Allow the tea to cool to body temperature.
4. Add the mature acidic kombucha. When you obtain a culture, it will be stored in this liquid. Save a portion of subsequent batches for this purpose.
5. Place the kombucha mother in the liquid, with the firm, opaque side up.
6. Cover with a cloth and store in a warm spot, ideally 70 to 85 degrees F.
7. After a few days to 1 week, depending on temperature, you will notice a skin forming on the surface of the kombucha. Taste the liquid. It will probably still be sweet. The longer it sits, the more acidic it will become.

8. Once it reaches the acidity you like, start a new batch and store your mature kombucha mother in the refrigerator. You now have two mothers: the original one you started with, and the new one, the skin that formed on your first batch. Use either the new or old mother in your new batch, and pass the other one on to a friend (or the compost). Each generation will “give birth” to a new mother, and the old mother will thicken.

Source: Wild Fermentation

BEET KVASS

This drink is valuable for its medicinal qualities and as a digestive aid.

SPECIAL EQUIPMENT:

- 2 quart glass container with tightly fitting lid

INGREDIENTS:

- 3 large organic beetroot, peeled and chopped up coarsely
- 1/4 cup whey (if fresh whey is not available just add another tablespoon of sea salt)
- 1 1/2 tsp sea salt
- filtered water

PROCESS:

1. Place beetroot, whey and salt in a 2-quart glass container.
2. Add filtered water to fill the container to an inch or two below the top of the jar. Stir well and cover securely.
3. Keep at room temperature for 2 to 3 days before transferring to refrigerator.
4. When most of liquid has been drunk, you may fill up the container with water and keep at room temperature another 2 days. The resulting brew will be slightly less strong than the first. After the second brew, discard the beets and start again. You may, however, reserve some of the liquid and use this as your inoculant instead of the whey.
5. Note: Do not use grated beetroot in the preparation of beet tonic. When grated, beets exude too much juice resulting in a too rapid fermentation that favors the production of alcohol rather than lactic acid.

Source: Nourished Magazine