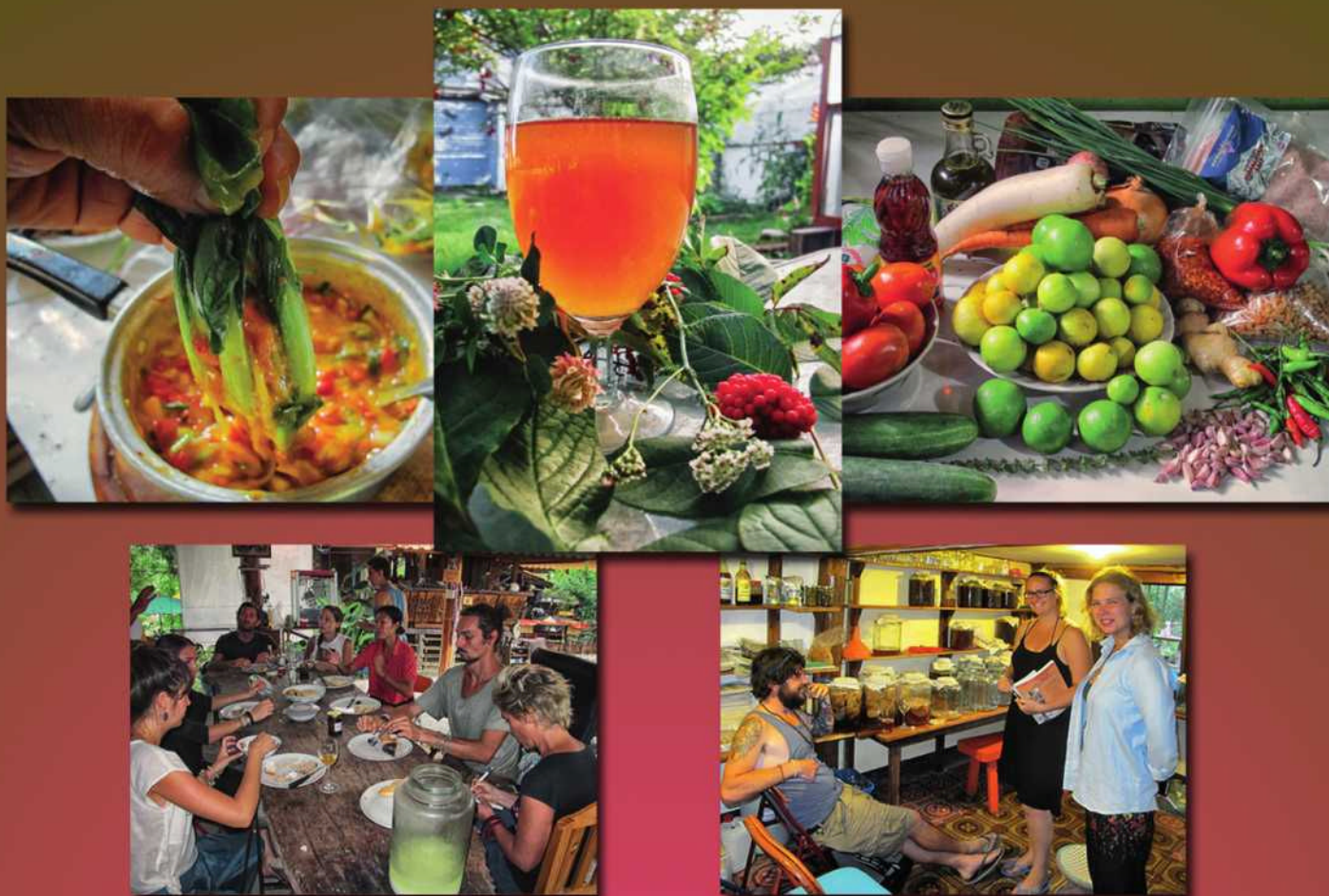


FERMENTATION

BASIC RECIPES and GUIDELINES



FUNDAMENTALS

There are Four Main Types of Traditional Fermentations.

Bacterial, Yeast, Molds, and Chemical Fermentation.

Each variety is part of the complex systems that Nature provides for our enjoyment, such as taste, textural qualities, and digestibility of foods. One very important advantage of fermented foods is that they are somewhat pre-digested, increasing the food's bio-availability which releases intense medicinal qualities. Proper fermentation also increases the safety of the foods we ingest.

Some Basic Examples of The Four Fermentation Types:

Bacterial:

Sauerkraut, Dill Pickles, Kefir, Yogurt, Cheese, Pu-Ehr Teas, Cocoa.

Yeast:

Wines, Beer, Mead, Soughdough Breads.

Mold:

Tempeh, Soy Sauce, Miso, Douchi, Saki.

Chemical:

Norwegian Lutefisk, Chinese Century Eggs (Pidan).

Note: (Some overlap and combinations happen in some of them, but in general the paths initially followed are specific).

Example: Correct technique Korean Kimchi actually follows 2 pathways; Kombucha Tea follows 2 pathways concurrently, therefore is what we call a '**Combination Ferment**'. Other techniques involve going on one selected pathway for a time and then switching to another pathway, such as when making Apple Cider Vinegar. This is '**Chain Fermentation**'.

FUNDAMENTALS

More Beyond Basic Fermentations.

Besides the four main fermentation techniques employed by almost all cultures, there are fascinating combinations possible, resulting in the incredible diversity of foods found world wide in so many countries.

The Asian cultures, particularly Chinese, Japanese, and Korean Cultures are of particular interest as they have developed this area of fermentation to very high levels of excellence, sometimes requiring a lifetime to attain the status of a 'Master' of even just one 'Fermentation Art'. However, one can learn and produce wonderful recipes using these techniques even as a beginner, but some require time and learned knowledge to even attempt them. Certainly a worthwhile adventure!

Some Examples of 'Combination' and 'Chain Fermentation':

Bacterial and Yeast:

Kombucha, Apple Cider Vinegar (ACV), Wine Vinegars, Malt Vinegars, Some Sourdough Breads, Real Korean Kimchi.

Bacterial and Molds:

Some Cheeses, Real Italian Salami, Thai Sausage (Nam Mu), Chinese Sausages, Soy Sauces.

Chemical and Bacterial:

Pidan (Chinese Century Eggs).

Note: One can play endlessly with creating new and exciting foods once one understands the basic 4 kinds of fermentation paths in nature. Good stuff to learn!

FUNDAMENTALS

The Three Stages of Bacterial Veggie Fermentation.

Note: Once one understand that a properly executed bacterial ferment results in a superior end product, one will never take silly shortcuts or do 'iffy' modernized shortcut vegetable fermentation recipes found now, that ask to use something like whey to 'start' them. That is a very bad practice, now proven by hard science research, and there are much better and safer ways to start a ferment if needed! (Practice responsible fermentation that is safe, and ultimately healthy)!

Salt, In Normal Water, (which is normaly PH 7.0), is used to drop the PH slightly and provide the perfect environment for the 1st stage bacteria in the fermentation process to proceed and grow very well, and do their initial critical toxin disassembly, and other nutrient unlocking procedures within the plant material. It is all a very natural progression designed into nature.

The best reason for using salt brine is the natural cycle of fermentation . Ideally what happens in a salt... (saline brine solution) is that it provides the correct environment for the first stage bacteria to flourish, instead of harmful ones...

Mostly, it is a PH thing that determines safe fermentation. All things ferment, it is whether the ferment is on safe or unsafe terms is all. (Even a deadly or bad bacterial ferment is still fermentation. How we control it determines the end product).

Stage One: Leuconostoc mesenteroids bacteria naturally found on veggies and even in the air we breathe initiates fermentation. Since Leuconostoc mesenteroids produce carbon dioxide, it effectively replaces the oxygen in the fermentation vessel, making the environment anaerobic (oxygen-free). When lactic acids reach between .25% and .30%, Leuconostoc mesenteroids bacteria slow down and die off, although enzymes continue to function. This all happens usually within the first 4 to 6 hours.

SPECIAL NOTE on KIMCHI FERMENTATION: (This is where the Kimchi process is halted and the salt rinsed off, then the ferment continues on as nature lets it. In sauerkraut processing, the salt is left in. Also most kimchi's use a rice component at this stage of the ferment, which introduces a yeast fermentation into the total ferment).

Stage Two: Lactobacillus plantarum and Lactobacillus cucumeris bacteria continue the ferment until lactic acid level of 1.5%-2.0% is attained.

Stage Three: Lactobacillus brevis (some sources also include Lactobacillus pentoaceticus) bacteria finish off the ferment. When lactic acid reaches 2.0%-2.5%, they reach their maximum growth and the ferment is over. This is the preservation stage, and can be stored now for extended periods of time.

PH Levels: Note that, PH levels in the process continues to drop sharply as fermetation progresses, making a fermented food very safe for human consumption; far safer than conventional 'Modern Food Processing'. Harmful bacteria cannot exist at the low PH levels of 'correctly' fermented foods. Certain actions performed by the 1st stage bacteria also disassemble certain things such as anti-nutrients, that modern processing neglects to remove.

FUNDAMENTALS

SALT GUIDELINES.

Types of Salt:

A natural salt is the best choice for fermenting. If using a refined salt, choose one that is pure sodium chloride and does not contain any anti-caking agents or iodine. Salts with these additives can make the brine turn cloudy and leave sediment at the bottom, or cause a darkening or discoloration of the vegetables. Unrefined salts with all their minerals intact are recommended; they will be light pink or gray in color. Popular choices are sea salts, Himalayan Pink, Celtic Grey, and Redmond Real Salt.

It is possible to create lower sodium ferments, but there is more risk of spoilage, the vegetables will tend to get mushy, and the shelf life will be shortened. Proper salinity helps keep vegetables crisp and encourages the growth of beneficial bacteria. If you choose a natural, unrefined salt you will also be ingesting necessary trace minerals.

Mixing a Salt Brine:

Vegetables can be fermented in brines from 1.5% to 5%. There are several bacteria that work together to ferment vegetables and they all have a different optimum salinity. A brine of 2% to 3% will tend to achieve the best flavor profile. Brines higher than 5% will curtail bacterial activity.

Cucumber pickles should be fermented in a brine of 3.5% for half-sours or 5% for full-sours.

Below are instructions for mixing brines. Real Salt brand fine grind was weighed and used to get these measurements. Measure salt and stir into cool water until dissolved.

For 1 quart of water/salt brine:

2% = 19 g or 1 tablespoon

2.5% = 24 g or 1 tablespoon + 1 teaspoon

3.5% = 33 g or 2 tablespoons

5% = 48 g or 3 tablespoons

Dry-Salting Vegetables:

Dry-salting means you mix salt with sliced or grated vegetables to draw liquid out so they create their own brine. This is the method used for sauerkraut and saueruben. Measure salt as a percentage of the weight of the vegetables. Again, a range of salinity will work but best flavor will be achieved at about 2%. Real Salt fine grind was used to calculate these measurements.

Vegetables (pounds) to salt (grams)

1/2# : 5 g or 1 teaspoon

1# : 9 g or 2 teaspoons

2# : 18 g or 1 scant tablespoon

2.5# : 23 g or 1 rounded tablespoon

3# : 27 g or 1 tablespoon + 2 teaspoons

3.5# : 32 g or 2 scant tablespoons

4# : 36 g or 2 tablespoons

5# : 45 g or 3 tablespoons

10# : 91 g or 5 tablespoons

It is quite important to use correct salt guidelines for each desired veggie ferment as this produces the nice results that a 'Properly Prepared' ferment has. Incorrect ferments may perhaps be safe to eat but taste or even look horrible. One eats with one's eyes as much as one eats with the mouth! As in any food preparation there are good cooks and bad cooks. Take your ferments up into the 'Good' category! Here is a great website with guidelines to produce optimal salt brines for each kind of veggie, also an online brine calculator to produce precise brines with:

FUNDAMENTALS

CONTAINMENT GUIDELINES.

THE MOST IMPORTANT PART OF A FERMENT:

It is often quoted that no harmful organism can live in a fermented food. This is inaccurate. Harmful organisms do exist in a ferment if the ferment was INCORRECTLY DONE!

In a PROPERLY EXECUTED ferment, no harmful organisms can harm one if one's body is not 'damaged' or has an Immune disorder that requires specific treatment by a health care provider. In fact in a proper ferment, the pH value is dropped rapidly under pH 4.6, where even the deadly Botulism bacteria cannot operate. Recent reports from the USD have identified cases of food illnesses, including a new kind of Botulism variety called 'Pocket Botulism'. I would advise to never use oils in a ferment due to reasons too complicated to explain here, however certain oil ferments practiced using specific oils can be safely done in some Ayurvedic Fermentation techniques. These I consider a bit advanced and one should get proper advanced instruction from a qualified person for these anyway. It really is easy to learn and safe. For some things it really is good to take correct instruction as this part is often neglected by recipes etc. online.

If wishing to go it alone, without instruction, I would advise buying only the specific oils used at an Asian market and use just those oils, no substitutions such as olive oil, etc. The good oils they use are special Mustard Seed oils or Sesame oils, btw.

Observe cleanliness in preparing and using jars, crocks, etc. One doesn't need the ever present 'Rot Causing Bacteria' to compete with a good ferment variety. This also involves proper hand washing and equipment washing, and avoiding cross-contamination while preparing and or serving a ferment. It is exactly the same as working with any food preparation! ***Keep one's hands for sure out of a ferment one is presenting to others!*** Certain disease or fungal contamination can occur, much to another's dismay later. Handle the food the same way as one would serving to others properly. Washed spoons, serving utensils, food handling plastic gloves is good and also a responsible practice!

If eating by oneself one's individual ferment do what you like, it is your body, no one else's.

Although ferments can be safe and eatable by not being real 'picky', it is still good practice to at least rinse a container or tools used with boiling water before fermenting with or in them. This practice actually was followed even far back for thousands of years in fermentation history as so doing, people found that this produced the right environment that competing rot bacteria are minimized, producing a ferment that has a jump start by not having to deal so much with the 'bad bacteria'. Also the end taste and even textures are enhanced and not damaged by any competition. **Take your ferments up a notch by simple and easy to do procedures anyone can practice!**

The first proven way in modern fermenting takes the technique from wine fermentation used for ages to brew any wine using the "Airlock" method. Using the following ways minimizes the invasive 'Kahm Yeast' a white powdery film that will coat any ferment, causing a very unpleasant taste in the ferment and also on a more technical note, the environment where the low pH of a proper ferment is raised immediately under the Kahm and soon creates an environment where 'Rot Bacteria' begin to grow once again, ruining a ferment or providing just the right raised pH to reanimate the more dangerous food poisoning varieties. Kahm yeast films and mold issues are the number one bane of fermenters everywhere, so this part of fermentation must be addressed by all who ferment anything. Ancient fermentation containment techniques also prevented these molds and kahm, but are a bit harder to implement as we have more modern materials and approaches a bit easier to use these days.

FUNDAMENTALS

CONTAINMENT GUIDELINES.

You will often hear people saying they 'burp' their ferments. This is an indication they are not doing everything that is commonly available now days to ferment in. Although one can if needed 'burp' the closed jars that anerobic veggie ferments require, it introduces another variable and that is 'exploding' jars as pressures can unpredictably detonate a glass jar driving glass shards through everything in it's path. I have seen the pictures of walls penetrated by glass, shards of glass embedded into hardwood beams over 20 feet from the detonation, and hundreds of stiches people had to get in emergency rooms, some wounds very close to severing arteries.

Far easier to just obtain proper airlocks or already made jars such as the 'Fidos' with already installed locks. It saves days and hours of frustration and failed ferments, which translate into time and money for most people. If one is a bit crafty or tool savvy, one can make an airlock several ways instead of buying them. You can find airlocks on the Internet or a local Wine ferment store. At this site they sell a very good system. Note: (I do not make a cent endorsing them, but find they are a good system is all). <http://www.pickl-it.com>

The reason for a proper airlock is it allows the harmful oxygen to escape the ferment area, and it is replaced by CO₂, which allows the ferment now to be anerobic and produce the best ferment. Molds and Kahm yeast do not like a high CO₂ environment, therefore it is uncommon for them to form in this kind of container. Perfect!

I developed and used another close second to the airlock system by using a very good food grade plain bag and a rubber band. Using it I had zero kahm or mold issues and it is a very good way of fermenting while travelling or in any emergency situation. If one is a bit paranoid about using plastics, then don't. Use a rubber or latex containment for much the same reasons. As taught in class one can use the bags for emergency safe extraction of water even out of the air, and such uses as starting fires, with a bag, water and the power of sunlight. Easy tricks for survival situations, that perhaps last days, months or the rest of one's life. Be prepared! Learn what one can, especially about safe water and safe food. Further instruction using the bag tech is in my document under Files titled: History_Sauerkraut_Suan Cai.pdf.

Another way that works quite well is by using the bag/weight locking system, where a good lightweight food grade plastic bag, (not a ziplock one), just a bit wider in diameter to the container is stuffed down into the ferment and a rubber band is affixed to hold it and then the bag is filled right to the top with water to act as weight and airlock all in one. Then is placed in a catch bowl and no burping required!

Here is a link to how to do that: Just push the button!

[Combo Baglock/Weight Technique](#)

Yes, the above is not a 100% guarantee kahm will not form, but don't be too scared of kahm, as one can easily blot it out of a ferment using a paper towel as it sticks to it like a magnet. If kahm and mold is a serious or continuing issue where one is fermenting, use the method that people who cultivate mushrooms do, as they require almost operating room sterility. They spray the room and surfaces with 'Lysol or Bleach spray' which knocks back the spores dramatically just prior to using that space. That is another easy trick.

Crock methods of fermenting work fine if one covers the surface of the ferment with a boiled cotton sheet tucked in around the vwgies, then a weight over such as water filled food grade bags, and then a cover of plastic wrap and over it all, a towel and a hard lid. The boiled cloth is a fairly sterile barrier and if mold or yeasts form can be easily lifted of a finished ferment and discarded. This is an old technique used by almost everyone 50 to 100 years ago, when fermented food was a normal everyday food for most people.

RECIPES

Basic Sauerkraut.

You will need a very large crock, glass or enamel container, Minimum of 2 heads of cabbage, Kosher salt, Plain Salt, Himalayan Salt or Sea Salt (Do Not Use Iodized or Table Salt)! Heavy duty food-grade plastic bags or 2 gal freezer bags, Wooden spoon.

Some tips here to prevent problems with your sauerkraut:

Never use aluminium utensils! Absolute cleanliness is necessary for a healthy brew!

I have a very old 5 gallon crock that I use to make my sauerkraut. But you can use a glass or enamel coated container. Clean and scald the container well! (You can simply scald by pouring boiling water into the container and swishing around for no less than 30 seconds)

To prepare the cabbage, remove and discard the outer leaves. Wash and drain and then cut the cabbages into halves or quarters while removing the core in the process.

Step 1) Shred Cabbage -If you shred by hand, make sure the shreds are no thicker than a nickel or a dime!

Step 2) Mix, with wooden spoon or very clean hands, 5 pounds of shredded cabbage with 5 teaspoons of Kosher salt or Sea Salt or Himalayan Rock Salt, (pickling salt will do but changes the flavour a bit - **do not use table salt**) and **toss and mix thoroughly until salt dissolves!**

(You can make as much as you wish as long as you use the ratio of 5 lbs. cabbage to 5 tsp. salt.) A better practice is use 5 grams salt to every 1 pound of shredded material, as salt varies by volume/weight.

Step 3) When juice starts to form on cabbage from tossing - **Pack the cabbage firmly and evenly into a clean crock, glass or enamel container. Press firmly (do it in layers of about 2 to 3 inch layers)** to encourage juice formation. Fill the utensil no closer than 5 inches from the top. If one wishes the American Relish Saurkraut then one bruises it by pounding but it produces a **very mushy end product which personally I find distasteful, but you can do it the way you like!** Make it your own! :)

Step 4) Make sure juice covers the cabbage completely! (This does not always happen unless the cabbage is fresh from the garden) I prepare additional brine by putting 2 Tsp. salt into 1 quart of boiling water. Dissolve salt and cool brine to room temperature before adding to the pot of cabbage.

How to pack and contain this ferment is covered later under Containment of Ferments.

NOTE: This is basic saurkraut. What makes it a regional dish is the addition of anything to it one wishes such as shredded carrots, daikons, green mangoes, green apples, berries, spices such as caraway seed, herbs, etc. The method is the same, the salt ratio the same, ingredients can vary, but the cabbage and salt make it saurkraut! The **South American** variety is called **Curtido**. The **Russian** variety is called **Kisla Kapoosta**, and the original one which comes from **Ancient China** is **Suan Cai**.

RECIPES

Basic Sauerkraut.

Step 5) Once cabbage is immersed in brine water, place a large food grade, plastic bags filled with brine water and lay on top of cabbage... (I use 2 large bags, one inside the other - sometimes a 2 gal freezer bag - with a couple of quarts of cooled brine water inside - this if the bag breaks it will not water down the cabbage into a tasteless mess). The cabbage must be well sealed all around with the bag, so no air can get in and contaminate the sauerkraut with unwanted yeasts or molds!

Step 6) Now cover the container with plastic wrap, then a heavy towel or cloth and tie securely into place. Do not remove this until fermenting is complete!

Step 7) Put in an area where the temperature will not be above 70 degrees. Fermentation will begin within a day, depending upon the room temperature.

Step 8) If room temperature is 75 degrees allow 3 weeks for fermentation. If temperature is 70 degrees allow 4 weeks. If temperature is 65 degrees allow 5 weeks. If temperature is 60 degrees allow 6 weeks.

NOTE: If temperature is above 75 or 76 degrees, the sauerkraut may not ferment and could spoil!

Step 9) Once fermented taste to see if your required tartness exists. Tartness will weaken if you process in canning so make sure it is a wee bit more tart than you like!

Can be eaten immediately if you desire! It can stay for months without canning if kept in a cold room, or in a fridge

(I sometimes mix in 1/2 teaspoon caraway seed into 4 cups, enough for a couple of pints or 1 quart. This makes a tasty variation. One can add shredded carrots, beets, onions etc. for variety.)

NOTE: if you refrigerate only rinse and toss with cold water to attain the tartness desired!

RECIPES

Pineapple Tepeche.

This light and sparkling summer drink is very popular all over South America and Central America, with people selling it from roadside stands and on the streets. It is ready from one to two days after preparing it.

2c brown sugar dissolved in warm water

Rind & core of 1 ripe pineapple

Few knobs of ginger

6 springs of Thai basil... other basil are good too.

2 grapefruits or other citrus fruits, juiced & add peels

8c water

This can be adjusted for ingredients and tastes with other things too, such as coconut, other herbs, etc.

Basic Wine Recipe.

The primary fermenter most often used by the home wine maker is a glass gallon jug. This may be readily sterilized and examined to check progress. An airlock is used to keep out unwanted air. These are usually made of plastic and consist of an inverted cup over a stem. The combination holds enough water so that carbon dioxide may escape by bubbling through the water. When the yeast is deprived of oxygen, it changes its method of growth, producing much more alcohol. New wine bubbling merrily in the jug is a beautiful sight. Fermentation will slow as the sugar is consumed and in two or three weeks will be essentially complete. It is now time to rack or bottle the wine. The recipe offered here is general and intended to stimulate the imagination. There is a good opportunity to create very fine wines from fresh fruit in season and from canned "rare" fruits in ready supply. Be aware, however, that much imported canned tropical fruit is of low quality. Most have a metallic taste from the can. If at all possible use fruit in bottles or fruit syrups.

GENERAL RECIPE

2 lb fresh fruit or 20 oz canned fruit

2 lb sugar

1 teaspoon grape tannin powder

2 teaspoons citric acid

1 teaspoon yeast nutrient

Wine yeast. (Lalvin Champagne Wine Yeast is a good one and available at any wine fermentory stores)

Water to make up 1 gallon liquid total

If the fruit has a high pectin content (jells easily) it will be desirable to add 2 tablespoons of Pectic Enzyme to assist in breaking down the pulp. A mild flavoured fruit may be used in greater quantities than one which has a strong flavour. There is nothing wrong with blends of compatible fruits, and indeed some of the best wines are blends. Bananas and raisins are particularly valuable since they give body to the wine without dominating the flavour.

RECIPES

Sourdough Starter.

Ingredients: (Makes 4 cups)

All-purpose flour (or a mix of all-purpose and whole grain flour,

(A Tbsp of rye flour added is most excellent)

Water, preferably filtered

Equipment:

2-quart glass or plastic container (not metal)

Scale (highly recommended) or measuring cups

Mixing spoon

Plastic wrap or container lid

Instructions:

Making sourdough starter takes about 5 days. Each day you "feed" the starter with equal amounts of fresh flour and water. As the wild yeast grows stronger, the starter will become more frothy and sour-smelling. On average, this process takes about 5 days, but it can take longer depending on the conditions in your kitchen. As long as you see bubbles and signs of yeast activity, continue feeding it regularly.

Day 1: Make the Initial Starter

4 ounces (3/4 cup + 2 tablespoons) all-purpose flour

4 ounces (1/2 cup) water

Weigh the flour and water, and combine them in the container. Stir vigorously until combined into a smooth batter. It will look like a sticky, thick dough. Scrape down the sides and loosely cover the container with plastic wrap or the lid (left ajar).

Put the container somewhere with a consistent room temperature of 70°F to 75°F (like the top of the refrigerator) and let sit for 24 hours.

Day 2: Feed the Starter

4 ounces (3/4 cup + 2 tablespoons) all-purpose flour

4 ounces (1/2 cup) water

Take down your starter and give it a look. You may see a few small bubbles here and there. This is good! The bubbles mean that wild yeast have started making themselves at home in your starter. They will eat the sugars in the the flour and release carbon dioxide (the bubbles) and alcohol. They will also increase the acidity of the mixture, which helps fend off any bad bacteria. At this point, the starter should smell fresh, mildly sweet, and yeasty.

If you don't see any bubbles yet, don't panic — depending on the conditions in your kitchen, the average room temperature, and other factors, your starter might just be slow to get going.

Weigh the flour and water for today, and combine them in the container. Stir vigorously until combined into a smooth batter. It will look like a sticky, thick dough. Scrape down the sides and loosely cover the container with plastic wrap or the lid (left ajar). Put the container somewhere with a consistent room temperature of 70°F to 75°F (like the top of the refrigerator) and let sit for 24 hours.

Continue Next Page:

RECIPES

Sourdough Starter.

Day 3: Feed the Starter

4 ounces (3/4 cup + 2 tablespoons) all-purpose flour

4 ounces (1/2 cup) water

Check your starter. By now, the surface of your starter should look dotted with bubbles and your starter should look visibly larger in volume. If you stir the starter, it will still feel thick and batter-like, but you'll hear bubbles popping. It should also start smelling a little sour and musty. Weigh the flour and water for today, and combine them in the container. Stir vigorously until combined into a smooth batter. It will look like a sticky, thick dough.

Day 4: Feed the Starter

4 ounces (3/4 cup + 2 tablespoons) all-purpose flour

4 ounces (1/2 cup) water

Check your starter. By now, the starter should be looking very bubbly with large and small bubbles, and it will have doubled in volume. If you stir the starter, it will feel looser than yesterday and honeycombed with bubbles. It should also be smelling quite sour and pungent. You can taste a little too! It should taste sour and somewhat vinegary. Weigh the flour and water for today, and combine them in the container. Stir vigorously until combined into a smooth batter. It will look like a sticky, thick dough.

Day 5: Starter is Ready to Use

Check your starter. It should have doubled in bulk since yesterday. By now, the starter should also be looking very bubbly or even frothy. If you stir the starter, it will feel looser than yesterday, and be completely webbed with bubbles. It should also be smelling quite sour and pungent. You can taste a little too! It should taste even more sour and vinegary.

If everything is looking, smelling, and tasting good, you can consider your starter ripe and ready to use! If your starter is lagging behind a bit, continue on with the Day 5 and Beyond instructions.

Day 5 and Beyond: Maintaining Your Starter

4 ounces (3/4 cup + 2 tablespoons) all-purpose flour

4 ounces (1/2 cup) water

Once your starter is ripe (or even if it's not quite ripe yet), you no longer need to bulk it up. To maintain the starter, discard (or use) about half of the starter and then "feed" it with new flour and water: weigh the flour and water, and combine them in the container with the starter. Stir vigorously until combined into a smooth batter.

If you're using the starter within the next few days, leave it out on the counter and continue discarding half and "feeding" it daily. If it will be longer before you use your starter, cover it tightly and place it in the fridge. Remember to take it out and feed it at least once a week. I also usually let the starter sit out overnight to give the yeast time to recuperate before putting it back in the fridge.

How to Reduce the Amount of Starter:

Maybe you don't need all the starter we've made here on an ongoing basis. That's fine! Discard half the starter as usual, but feed it with half the amount of flour and water. Continue until you have whatever amount of starter works for your baking habits.

Continue Next Page:

RECIPES

Sourdough Starter.

How to Take a Long Break from Your Starter:

If you're taking a break from baking, but want to keep your starter, you can do two things:

Make a Thick Starter:

Feed your starter double the amount of flour to make a thicker dough-like starter. This thicker batter will maintain the yeast better over long periods of inactivity in the fridge.

Dry the Starter:

Smear your starter on a Silpat or Parchment Paper and let it dry or use a dehydrator at about 100F to 125F, no more. Once completely dry, break it into flakes, grind in a spice or coffee grinder, and store it in an airtight container. Dried sourdough can be stored for months.

To re-start it, dissolve a 1/4 cup of the flakes in 4 ounces of water, and stir in 4 ounces of flour. Continue feeding the starter until it is active again.

Here is an excellent Web Site with good instruction and Sourdough Bread Recipes and support:

<http://www.sourdoughhome.com/index.php?content=usingastarter>

Milk Kefir Sourdough Starter.

Materials:

Gallon Ziplock bag, Flour & Water

How To:

Add 1 cup of flour to the bag, add 4 tablespoon milk kefir whey, or 4 tablespoon kefir milk.

Then add enough water to make a thick paste 1/2 cup to 3/4 cup. Now seal the bag and push as much of the air out as you can get out, gently squeeze the bag to mix all ingredients together, add more water if needed.

Set it out of direct sunlight at room temp about 65 to 85 degrees.

(If you don't have Kefir you may try yogurt, though yogurt does not contain the variety of microflora that Kefir does.)

Once a day for a week feed the culture with 2 tablespoons of flour 1 tablespoon water. The culture should begin its fermentation process within 1-3 days, recognizable by the yeasty aroma, bubbles and alcoholic smell.

Squeeze bag well every day to mix.

On Day 4: remove the mixture from the bag, divide into thirds, put 1 third back in the original bag then feed it with a 1 cup of flour and enough water to maintain the consistency and let sit room temp. After 24 hours it should be ready to use. Put the other 2 thirds in separate bags to give away, Store in the fridge or freeze.

Use with any sourdough bread recipe. It may take you several batches to get it the way you want it due to varieties of flours and local environment.

Two Easy Milk Kefir Breads Next Page:

RECIPES

Quick Kefir Sourdough Bread.

The starter is just a bit different than the previous ones. This starter is very simple to make, it is also smells very nice, just like kefir really. Moreover I have now found that any recipes calling for either a lump of the previous day's dough, or a sourdough starter, can easily be adapted to the this method.

Ingredients:

2 cups flour or bread flour
about 2/3 cup kefir milk

Add enough kefir to your flour in order to make a nice kneading bread dough. Knead until the dough is elastic and smooth. Place in a bowl, cover with cling film and leave overnight in a warm place. I leave mine in proofing cupboard. Next day, when the dough is well risen and before it collapses, punch it down and go to the next step.

The Dough:

(Yield 3 loaves)

Ingredients:

5 cups flour	3 teaspoons olive oil
1 teaspoon honey	1 cup warm water
3 cups unbleached white bread flour	1 tablespoon salt
1 pack easy blend yeast	

Oven at 425° F.

Move your starter to a large bowl and to it add the flours, salt, yeast, honey and oil. Slowly add enough water to obtain a good kneading dough. Knead vigorously until the dough is soft and elastic. Cover with plastic or damp cloth, and leave to rise in a warm place until doubled. Knock down, divide in three equal portions, put them in well oiled tins. Cover again, this time with oiled cling film so that when you remove it doesn't stick to the dough and deflate it. When well risen, remove the cling film and bake in a very hot oven for about 35 to 40 minutes or until it sounds hollow. Cool on racks.

One can divide the dough not in 3 parts as above. Try to ease out a forth smaller one and with it make a pizza. It saves quite a bit of time and pizza is very popular! Bake the loaves first and then time the pizza so that everything is ready at the same time. Most of your favorite bread recipes can be adapted to this method.

Irish Soda Bread.

This is one of the quickest bread you can make. It is traditionally made with buttermilk. However it works great with kefir. Milk Kefir is extremely easy to maintain so one has a continuous supply.

Ingredients:

2 ½ cups wholewheat flour	1 teaspoon bicarbonate of soda
1/2 teaspoon of salt	13 fluid ounces of kefir, or buttermilk or yoghurt
1 cup white flour	½ cup rolled oats
½ stick butter or margarine	

Oven at 425° F.

Mix all dry ingredients in a large bowl. Rub in the fat with your finger tips. Slowly add the kefir or whatever you are using until a nice kneading consistency is achieved. If you over do it, then add more oats or flour. You must not knead this dough. Quickly make two round loaves. Put them on an oiled oven tray and with the back of a long knife mark lines across. Traditionally Irish soda bread has four sections. I find that twelve sections is ideal for snacks.

Bake about 30 to 35 min. or until golden

RECIPES

Milk Kefir.

This ferment is a unique one and is an animal based ferment, used to ferment animal milk, however can for short times, be used to ferment vegetable based milks such as soy or coconut or other nut milks. There are endless variations on techniques but it is simple and basic, for an uncomplicated ferment that any beginner can do right away. One can easily make cheeses, medicines, cosmetics with it, but basically, It is simply taking some milk kefir grains that one has purchased or obtained and putting about one heaping tablespoon of them into milk. Leave in a covered container such as a glass jar for about 12 hours at room temps. Strain the grains out and add them to another batch of milk. The liquid fermented milk is MK or Milk Kefir that one can use for a multitude of uses. As one can write about the history, recipes and uses endlessly, here is the definitive Web Site with hundreds of pages on Milk Kefir by a world class expert on the subject:

<http://users.sa.chariot.net.au/~dna/kefirpage.html>

Here are some fun drink recipes one can try once one has made the basic kefir:

A word about using Kefir in beverages. Kefir should be used only in cold or room temperature beverages, as it curdles if added to hot tea or hot beverages. It adds a delicious richness and a bit of a zing to beverages, as you'll learn. Use the kefir milk in any recipe or on anything that normally sour cream or buttermilk would be used. Put kefir milk on baked potatoes, in salad dressings, in biscuits & in gravys. Mix it with apple sauce or crushed pineapple for a cool healthy treat.

Milk Kefir Orange Cream-Cicle

1/4 cup orange juice (with or without pulp)

1/2 to 1 cup kefir milk

1/2 tsp vanilla (optional)

Stir together, or put in the blinder. Enjoy frozen, as is, or over ice.

Carrot Chill

You can juice your own, or purchase fresh or frozen carrot juice for the recipe.

1/4 cup fresh juiced carrot juice

1/2 to 1 cup kefir milk

1/2 tsp vanilla (optional)

Stir together, or put in a blender Enjoy frozen, as is, with a dash of nutmeg, or over ice.

Grape Power Treat, If you prefer a drink that's sweeter and more like a milkshake:

1 TBS frozen 100% Grape Juice Concentrate (Do not add water)

1 cup Kefir milk

Or Alt:

1/4 cup 100% Grape Juice (not the concentrate, but the juice)

1/2 to 1 cup Kefir

Using the recipe you prefer, stir the two ingredients together or place together in a bowl and mix or put in a blender. Enjoy frozen, as is, or over ice.

Sweet Kefir Cream

1 cup Kefir milk

2 tsp Organic Sucanat (can use other sweeteners but they do change the taste)

Stir together with a hand mixer, let stand for 5 minutes, stir by hand a few times (time can vary depending on whether you enjoy the burst of flavor from sucanat specks or prefer that they dissolve completely before drinking. Enjoy as is!

Mildly Maple

1 cup Kefir milk (not cold, use fresh or room temp kefir milk)

1 TBS Pure Maple syrup (or Molasses)

Stir together in a bowl or use a blender. Enjoy frozen as is, or over ice.

RECIPES

Milk Kefir Recipes.

Pumpkin Delite Smoothie , Kids and adults love this one!

1 cup Kefir mil

2 TBP pureed pumpkin

1/2 tsp vanilla (optional)

Pinch of cinnamon &/or nutmeg

Blend ingredients together in a bowl with hand mixer. Enjoy almost frozen, as is or with a dash of cinnamon & sugar sprinkled on top.

Wow Cranberry Smoothie

1 cup frozen cranberries

1/2 cup frozen blueberries

(You can buy fresh or canned cranberries & blueberries and freeze them or just buy frozen)

Juice of one small lemon

1 cup cranberry juice

2 cups Kefir milk

1/2 tsp Vanilla (optional)

Blend the frozen fruit and juices together in a blender until fruit is pureed smooth. Add kefir milk, blending enough to stir in completely. Serve as is and enjoy.

Fruity Breakfast Smoothie

1 cup Kefir milk

1/2 cup frozen fruit (strawberries, peaches, raspberries, cherries or blueberries etc)

1/2 to a whole banana

6 ice cubes or 1 cup crushed ice

Puree ingredients in a blender until smooth. Pour and enjoy!

Tropical Island Smoothie

1/2 cup crushed pineapple with juice, chilled

1 banana, frozen and sliced into chunks

1/2 cup soy milk, frozen in an ice cube tray (you can use any Mamual, grain or nut milk)

2 cups Kefir milk

1/2 tsp vanilla (optional)

Coconut shavings. (optional)

Puree fruit and coconut ingredients together in a blender until smooth. Add kefir, blending enough to mix in completely. Serve as is and enjoy.

Chocolate Lovers Kefir Recipes

Basic Chocolate Kefir

Two chocolate recipes follow, depending on whether you prefer Chocolate Syrup or Hot Chocolate Powder.

1 TBS Chocolate Syrup

1 cup Kefir milk

1/2 tsp vanilla

Blend together and enjoy!

Raspberry Chocolate Kefir

Chocolate works well with Vanilla, Peach or Strawberry flavoring in Kefir also

1 Tbsp of your favorite of hot choco powder

1/2 to 1 cup Kefir milk

1/3 cup juice concentrate Can use a hand mixer or blender or just mix by hand.

RECIPES

Water Kefir.

Not really a KEFIR at all, but simply mis-named kefir. The water kefir is a naturally found culture inside certain semi-tropical fruits in S. America up towards Mexico and perhaps brought into S. E. Asia about 500 years ago by Spanish or Portuguese explorers and traders, as three strains exist. The S. American one called 'Tibicos', a Spanish word, and two others, the one from S. E. Asia and another strain found up towards Japan and Hawaii. They are all variances of the same 'granular pellicule' type of SCOBY. A SCOBY by nature is a 'Symbiotic Community Of Bacteria and Yeast' thus named by Len Porizi, who wrote the definitive article originally about Kombucha, another pellicule forming culture that can be used to ferment things. These pellicules or SCOBYs are either granular such as the Milk Kefir one, or the Water Kefir one, or a film type such as Kombucha or Jun.

Other pellicules found and used for fermenting are not SCOBYs such as ACV or Wine Vinegar ones which are MOVs, (Mother Of Vinegar), and as such do not contain the Yeast component as a true SCOBY does, but one containing Acetobacter bacteria that make Acetic Acid Vinegar as is ACV or Wine or Malt (Beer) vinegars.

Kombucha although producing a very tiny amount of Acetic Acid produces another kind of vinegar which is Glucuronic Acid, which may have a medicinal value quite unique, certainly not the same as any regular vinegar.

Water kefir is a fascinating culture used for incredible fermentation tasks besides the usual soda type drinks one can make with it. I have made a gorgeous soy milk ferment with it that is amazing and so rich a dessert like a custard type yogurt. It is far more versatile and tasty to ferment nut milks than is Milk Kefir, and can ferment most things that are sugar based. It's main rival Kombucha produces pro-biotics of different strains, so one if wanting a broader pro-biotic strain count should do both as they are both somewhat debateable on the actual remaining live cultures left after fermentation due to how each person may use them. Pro-biotic counts in LAB tests with either, swing all over the map. Both are great recreational ferments, however, and WK is quite a bit less complicated to do than is kombucha.

The general idea is to dissolve sugar in water and allow the grains to ferment in this mixture for one to three days. Once fermented, remove grains and drink kefir as is, or add flavoring (in the form of fruit or juice) and allow to ferment for another day. It is during this second ferment that kefir often becomes very bubbly (but not always).

The amount of sugar, type of sugar, length of fermentation, and type of flavoring can all vary.

Here is a step-by-step of how I usually prepare water kefir:

In a pot, on the stove top, dissolve 1/3 cup of sugar in 1 cup of water*. Allow to cool a little then add 3 cups of water. Pour this mixture into a 1/2 gallon mason jar and add another 1 1/2 to cups of water (so the jar is filled close to the shoulder or 6 cup mark).

If the water is room temperature, add 1/3 cup of water kefir grains.

(Some people choose to contain the grains in a muslin tea bag, which makes removing them from the jar easy. However, I found the grains did much better when allowed to float freely.)

Add 4 drops of liquid minerals available at health food stores or some grocery stores now, or up to a 1/16 tsp Himalayan Rock Salt. (This step is optional, but highly recommended. Water kefir grains thrive on minerals and I notice a huge difference when I don't add them.)

Cover with a tea towel or coffee filter and secure with a rubber band.

Leave in a warm place to culture for 24 to 72 hours. The longer you leave it, the less sweet it will be as the grains eat the sugar! Taste the water kefir each day to see if it has reached your desired level of sweetness.

Once it has, strain out the grains by placing a plastic strainer over another mason jar and pouring the kefir through it.

Be sure to use a plastic strainer as metal is reactive and not recommended for use with kefir grains.

Store the grains in a sugar water mix in the fridge or use them to begin a new batch of water kefir.

Once the grains have been removed, I like to do a second fermentation.

The second fermentation is a great time to add fruit (fresh or dried) or fruit juice for extra flavor. I often add a cup or so of grape or cranberry juice. (Other options next.)

Instead of using a towel or coffee filter to cover the top, place plastic wrap over the mouth of the jar and then the lid.

This will keep out the air and allow bubbles to form.

RECIPES

Water Kefir.

Leave the water kefir covered for another 24 to 72 hours. Then strain out any fruit pieces and pour into a clean container or bottle. Store in the fridge.

Variations: <http://www.yemoos.com/water-kefir-quick-guide.html>

I have used the same basic method to make a larger amount of water kefir. In fact, I use the same amount of kefir grains, 1/3 cup, but dissolve 3/4 cup of sugar in 2 cups of water, then pour into a gallon size jar and fill to the shoulder with water.

It is possible to place the kefir grains directly in juice or sugar water containing dried or fresh fruit. If you have extra grains, then I would suggest experimenting with these methods, but when just starting out I highly recommend keeping the grains in sugar water only. This way they will not be compromised before you have any extra stored away.

To make fruit juice water kefir:

Place 3 Tablespoons of kefir grains in 1 to 2 quarts of juice (preferably organic). Cover as directed for the first fermentation and allow to sit for 24 to 48 hours. Strain and enjoy!

Cream soda:

Add 3 teaspoons of pure vanilla extract to 2 quarts of water kefir after straining. Increase (or decrease) amount of vanilla to your taste.

Add raisins, dried figs, or whatever takes your fancy!

WK is the perfect ferment to ferment coconut water. It is highly medicinal with huge electrolytic and other benefits. It tastes incredible fermented with WK. It has the exact perfect balance to do the ferment; just coconut water and nothing else required.

How to store kefir grains:

If you need to take a break from making water kefir, the grains may be stored in the fridge for up to two weeks in a sugar water mixture. Dissolve a 1/2 tablespoon of sugar in a 1/2 cup of water. Cool. Add grains and sugar water to a clean, airtight container. Keep refrigerated.

What type of sugar to use?

Sucanat is better because it is less processed than other sugars and still contains minerals, which the kefir grains love! If the sucanat flavor is too strong for your taste, try using organic sugar, or half organic sugar and half sucanat. Sugar types can affect the taste greatly as there are so many kinds, some which may give tastes one would not enjoy. Try which ones you like and combinations to get a pleasing taste.

*A note about water

Since kefir grains love minerals, it is important to use water with a high mineral content. Spring or well water are the best options.

If it is necessary to use tap water, remove the chlorine by boiling the it first

RECIPES

Kombucha.

Kombucha is probably at least in the Western world, most people's introduction to home fermenting. It is a very interesting and good workout to learn some basic drink fermentation techniques. Kombucha is a 'Combination Ferment', employing both the fungal/yeast pathways and the bacterial ferment pathways at the same time. This is somewhat unique as all drink ferments using any sugars or sugar based foods, are actually a wine or alcohol producing fermentation. All wines because of the alcohol can produce vinegar if wished, because first there must be alcohol before any vinegar can be made. Kombucha does both at the same time. (As the yeasts in Kombucha produce alcohols the bacteria in the Kombucha eat the alcohol and make vinegar, so both are present at any time). The acid or what we call vinegar in Kombucha is quite different than in a conventional wine/vinegar ferment also as it is mainly Glucuronic Acid instead of the usual Acetic acid, however some Acetic is sometimes present in small quantities.

Here is a definitive Web site all about Kombucha written by Len Porizo, the man who gave the culture (SCOBY) its name. This website explains Kombucha in detail on how to keep a Kombucha culture healthy and productive:

http://users.bestweb.net/~om/kombucha_balance/

Kombucha Tea

Ingredients:

The Kombucha culture (the SCOBY).

Approximately 70 - 100 g (2 - 3 oz) of refined white sugar per litre (about one quart) of water.

2 teaspoons black or green tea per litre (about one quart) of water,

Utensils and Materials:

One 2 - 4 litres (2 - 4 quarts) pot to boil water

One 2 - 4 litres (2 - 4 quarts) glass or porcelain jar

A rubber band

A linen/cotton handkerchief or a paper tissue

Bottles

Make tea using 5 black or green tea bags, 1 cup of white sugar, and 3 quarts of water.

Procedure for the Preparation of Kombucha

It's best if you begin first with one or two litres (1 – 2 quarts). When your Kombucha culture has grown big enough and has reproduced itself, you can produce larger quantities of the beverage.

1. - Make tea in the ordinary way. Per litre (quart) of water, infuse 2 teaspoonfuls (about 5 g = 0.2 oz) of black or green tea in freshly boiled water. You may also use tea bags. Let the tea leaves "soak" for 15 minutes. Green tea comes from the same plant as black tea and is distinguished from it principally by the way it is processed: It is not fermented. Fermentation destroys the chlorophyll and changes some enzymes. Japanese doctors found out that green tea prevents cancer growth. I would suggest to use green tea for the Kombucha beverage. If you don't want to use black or green tea you can also use herbal teas.

Do not use "Earl Gray" types of teas, or "Flavoured" with oils teas, as it will kill the SCOBY. (There is a way of using oil type teas but beyond the scope of this basic way, and can be explored as one becomes a more advanced kombucha producer).

More on next page:

RECIPES

Kombucha.

KOMBUCHA TEA

2. - Strain off the tea leaves through a sieve, or remove the tea bags from the water, as the case may be.
3. - Add about 70 - 100 g (2 - 3 oz) of white sugar per litre (quart) of water into the filtered infusion before it has cooled. Stir the tea so that the sugar dissolves totally. 1 tablespoon of sugar is about 20 g (0.7 oz). If using green tea add some brown sugar with the white sugar, about 25% of the total volume, as brown sugar has a favourable reaction with green tea. White refined sugar is what the SCOBY loves, as it is the right chemical makeup it needs for it's health. It eats it best.
4. - Let the sugared tea cool down to a temperature not higher than 20° - 25° Centigrade = about 68° - 77° Fahrenheit (lukewarm). The culture dies when if it is placed in a hot nutrient solution.
5. - When the tea has cooled to room temperature, pour the solution into a glass, china, glazed earthenware or stainless steel container. Glass is best. Metal containers of other types than stainless steel are unsatisfactory and should never be used because the acids formed may react with the metal. You could also use a high-grade synthetic material of the polyefine group, e.g. polyethylene (PE) or polypropylene. Wine or cider is also kept in containers made of this food-grade material. However, you should avoid containers made of polyvinylchloride (PVC) or polystyrene.
6. - If you prepare your first Kombucha drink, add the liquid that you got with the culture. On all later batches, always keep enough Kombucha drink to add about one tenth (10%) of the quantity to your new batch as a "starter liquid".
7. - Place the live Kombucha culture in the liquid.
8. - Cover the mouth of the fermentation container with a tightly woven fabric, a tea towel, paper towel or similar light cloth to keep out fruit flies, dust, plant spores and other pollutants. Tie it down with a large rubber band to ensure that fruit flies can't get in. The cloth must be porous enough to allow air to circulate so the culture can breathe, but not so porous that tiny fruit flies can get in to lay their eggs.
9. - The fermentation should proceed for 8 - 12 days, depending on the temperature. The higher the room temperature, the faster the fermentation. The period of 8 - 12 days is given merely as a guide.

The Kombucha culture needs a warm and quiet place and should on no account be moved. The temperature of the tea should not fall below 68°F (= 20° Centigrade). The ideal temperature is about 74°F - 85°F (=23° - 29° C). Light is not necessary. The culture also works in darkness. The culture may be damaged by exposure to bright sunlight. Half shade is better.

No SCOBY but have an already made bottle of kombucha?

It is very easy to grow a new scoby from it. Just place the liquid into a water glass or small glass jar. tie a handkerchief over the top or a coffee filter and wait. A film begins to form within a few days and after perhaps a couple weeks, one has a SCOBY, which one can now introduce into a larger container if wished. Now you are making kombucha! A SCOBY grows to the size of it's container so one takes it up just to the next size so it has a good chance of new growth. Easy!

Hundreds of ways people have flavored it in what is called by most home-fermenters, a 2nd ferment. One can follow instructions on You Tube or dozens of Facebook Groups, some dealing exclusively with Kombucha for more advanced information and instruction beyond the basic recipe. Our group for the class has open discussions always on Kombucha as most love making it!

RECIPES

Mixed Vegetables.

This is a very basic, and dead easy ferment. Here is how:

Just chop up any similar textured veggies such as carrots, radish, daikon perhaps, hard whole peas in pods, cauliflower, etc. One may add slices of ginger if one likes a gingery taste, sprigs of other herbals such as basil perhaps for taste. Mix in only veggies you like and herbs you like together. Add in a few spices such as pickling spices one can buy mixed, or ones such as mustard seeds go very well. A couple of bay leaves is always a good idea as bay evens, and enhances tastes in anything without imparting a distinct taste, as it is quite neutral plus is an ideal source of tannins to add to the 'bite' of anything. Tie the spices in a mesh bag so they do not float about. Perhaps add chunks of red or cooking onions, garlic cloves, peeled of course and perhaps best if sliced in two. Maybe a small chili for heat if wished.

Mix together and put in a container selected to hold the amount one has. It is ideal to keep the quantity at about 1 liter or 1 quart jar. If one layers them, it is not ideal as the ferment may become uneven and will produce less than optimal tastes, or less than even fermentation.

Mix up a brine of 3.0%. This is 30 grams or if using a measure is 2 Tablespoons non-iodized salt in 1 liter or 1 quart of water and pour over the veggies to cover right to the top of the jar and overflowing. This is important as you will read later in tips and tricks of proper containment of ferments.

Ferment a minimum of 2 weeks in warmer climates but about 4 to 6 weeks at about 68F to 70F. Enjoy!

(How to pack and contain the ferment of course is in the "Containment" section at the end of this document).

Actually this is the way to ferment any normal veggie and the 3% brine will produce a good and consistent ferment with veggies.

Do the same thing with individual veggie ferments. One can, after the fermentation use the veggies in any recipe, even cooked recipes. Yes, the live pro-biotic bacteria would cook out and die but the benefits of fermentation remain. The act of fermentation has removed certain toxins, unlocked nutrients and so forth. Fermentation goes far, far beyond, just some live pro-biotic bacteria that may still be surviving in a finished 'pickle type' veggie ferment. More important things were done to the food in the process. One can get creative and come up with nice veggie platters or side dishes using basic veggie ferments. Try things like cutting the veggies into nice fancy shapes, etc. Lots of fun and such an easy, and quick ferment that can grace any dinner table. Correctly fermented veggies retain colors and textures so one's eyes can be teased by their delights. (One eats first with one's eyes, and then one's mouth!)

Using this method one can very quickly use up a bounty of veggies that one might obtain without having to deal with any complicated ingredients making up specific recipes. The food is immediately put into a safe ferment, as fresh as possible and then later one can take them out to create recipes as needed.

RECIPES

Century Eggs (Pidan)

5.25% lye (I used 52.5g lye / 1000ml water)

5% salt (50g salt / 1000ml water)

100% water (1000ml water)

Chicken eggs 16-20 or duck eggs 12-16

Plastic jar or metal pot (do not use glass as it will crack from the lye).

1. Put lye, salt and water in the plastic jar and mix well. Be careful don't let lye touch your skin and eyes.
 2. Add eggs. The brine should cover all eggs.
 3. Don't touch the jar at least for 7-10 days. Otherwise the egg yolk won't set.
 4. After 7-10 days, take the eggs out of the jar, wash and let dry. Then use a vacuum packing machine to seal the eggs, in order to avoid oxidation.
 5. Wait for another 3-4 weeks before opening it. The egg white should be transparent amber/brown and the yolk should be black/green and creamy now. Eggs can be saved in the vacuum packs for at least one year. The eggs can be steamed before shelling and eating, or just as is.
- Beautiful and 'cavier like' taste treats, great on a nice snack cracker and wine!

If you don't have a FoodSaver, you can just leave the eggs in the brine for 21-28 days. However, if over fermented (i.e. over 28 days) it will lead to yellowed eggs.

Banh Mi Vietnamese Pickle (SPICY CARROT DAIKON PICKLE)

Here is the recipe for the pickle that is taking America by storm these days and so popular in any restaurant, Vietnamese or not!

Ingredients:

1 lb. carrot, unpeeled

1 lb. daikon radish, unpeeled

1 chili pepper (optional, but if you don't mind a little bit of heat, use it, or use a pinch of hot chili flakes)

2 (15 g) teaspoons fine sea salt (best to use a scale instead of measuring spoons)

Procedure:

If you have super knife skills, take your carrot and daikon and make them into matchsticks. I cheat and use a mandoline or grater.

Remove the chili's crown and slice it in half, lengthwise.

Put the shredded or cut carrot and daikon into a bowl and toss well with salt.

Once they're sweating, pack them into a quart jar with the chili halves. If you want prettiness, lay your chili halves flat against the side of the jar and pack the roots in around them tightly. Your jar should be full to just below the shoulders, and you should have a thin layer of liquid on top.

If your pieces are larger, you may need to massage them a bit longer to get them to release their liquid.

If they're really not giving it up, add a tiny bit of brine to the top to ensure that they stay submerged.

I use 2.5% salt by weight for these. If you need to add water, you can stick to that %, or just add a tiny pinch of salt and some water to the top.

Weigh your pickles down to ensure a thin liquid layer covering them, and use containment as instructed in this guide or the workshop. Let sit at room temperature for about one week, or until desired acidity is achieved (the longer they ferment, the more acidic they will be). Then refrigerate. Enjoy as soon as they're chilled! Great with pork chops, fish, hotdogs, etc.

RECIPES

Dill Pickles

Ingredients:

1 gallon (16 cups) pickling cucumbers, unwaxed (Eating varieties sometimes work if they are very small and young).
2 bunches fresh dill
16 cloves garlic, whole and peeled
1 dried small chili
3 tbsp pickling spices (peppercorns, mustard seeds, bay leaves, cloves, etc. 'can always be bought mixed already')
Plain or sea salt, (non iodized of course and no additives either).
Tannin leaves (grape tannin powder for wine, or bay leaves work excellent, so does nice green or black tea leaves but do not use the Pu-Ehr varieties as they are a living ferment already, and interfere with a good ferment).

Preparation:

1. Soak the cucumbers in coldwater for a few hours then scrub them thoroughly to prevent any mold from forming during the fermentation process. Chop off and discard the flower end. (it has softening enzymes in it).
2. Place the dill, cucumbers, garlic and spices and leaves or a bit of tannin powder in your fermentation jar up about the neck of the jar.
3. Prepare a brine and fill jar to overflowing if using the plastic wrap technique or leave an inch of headspace if using an airlock jar system. One can add a glass weight to hold down the cukes and keep them under the brine.
4. Place it in a spot in your kitchen no more than 75 F is best, and allow the cucumbers to ferment for 5 to 7 days, then into the fridge to finish off..
A good way to know when it's ready is to taste it during the fermentation process. It's ready when you like them. The colors will change, bubbling may occur, the brine will get cloudy, but leave them at least over 5 days before tasting for sure!

Brine Preparation:

For each liter or quart of water use 2 level Tablespoons plus 2 level tsp salt. stir well to dissolve.
This recipe would take about 4 to 5 liters (or quarts) of brine. If one is to get picky it is 35 to 40 grams salt/liter, however using the spoons is close enough if one has no kitchen scale. (Good idea to buy a cheap gram/kilo/ounce/pound scale as many ferments need exact measures and so very handy to weigh things for repeatable results)! Pay about 10 or 12 dollars for one and is worth every penny ten times over when fermenting or for so many kitchen tasks!

Variations:

Using the above formula for the brine, one may introduce several other cruciferous veggies into the ferment, such as nice pieces of cauliflower, or brussel sprouts or slices of kolorabi. If wished even a few carrot spears or full pods of peas may add interest.

Pepper or Tomato Ferments.

Note:

By upping the brine concentration to about 5% to 5.5% these vegetable ferments can be a safe and successful ferments. They are a very different group of plants which many cannot tolerate, as they are of the 'Nightshade' group of plants, so care must be taken and if one is intolerant of them, just avoid them. However after fermenting them they can be taken into other interesting products such as sauces, and components of relishes, etc. Note that a very different group of bacteria start this particular ferment as it is a high salt ferment which keeps the texture intact but the ferment can take a longer time and should be done at low temps under 72 F for optimal results. Care must be taken so the ferment does not produce harmful gas bubbles inside the product, easily done by proper cutting or piercing of the skins if fermenting whole. Containment and brine coverage is the same as any veggie ferment.

ENDNOTE

Web Sites Of Interest.

This document of course is an overview of what was shared in the workshop, so it does not contain any advanced or perhaps even more of the 'science of fermenting', so here is a good list of some essential references found on the Internet to stimulate your imagination and provide more recipes and details that one can use in your fermentation adventures.

The mold fermentation pathways are not addressed here but are an essential part of fermentation arts, and I encourage anyone to take a good look at it once one has some confidence in doing the basics. These mold techniques are the core of Asian, especially Japanese fermentation technology and have unique benefits that one will find of use, but they are a bit complicated for beginning fermenters. Keep it simple for now and have many successes in your fermentation journey back to the way food was prepared for almost all of human history until the last 60 or so years 'forgot' about it, and followed a different path, perhaps a path not so healthy.

Sites: (Just copy/paste the addresses into your browser's address bar to get to any site)

<http://www.pickl-it.com/blog/737/brine-calculator/>

http://users.bestweb.net/~om/kombucha_balance/

<http://users.sa.chariot.net.au/~dna/kefirpage.html>

<http://www.kombuchakamp.com/kombucha-brewing-carbonation-techniques-advanced>

<http://extension.psu.edu/food/preservation/safe-methods/sauerkraut>

<http://www.yemoos.com/water-kefir-quick-guide.html>

<http://www.yemoos.com/>

<http://www.weedemandreap.com/homemade-soaked-tortillas/>

<http://www.culturesforhealth.com/basic-formula-fermenting-any-vegetable>

<http://www.sourdoughhome.com/index.php?content=usingastarter>

<http://www.ncbi.nlm.nih.gov/>