

4. Using a pounder, a masher, or your hands, bruise and mash the mixture well. The goal is to get a good brine from the cabbage releasing its juices.

5. Repeat steps 3 and 4 until all your cabbage, garlic, and salt are properly mashed in your fermenting vessel.

6. Let sit for 10-20 minutes to allow the salt to draw as much of the liquid out of the bruised cabbage as possible.

7. Place the whole cabbage leaves that were set aside previously (*the leaves help keep cabbage bits from floating to the top*) over the top of the kraut, then take a clean plate or crock weights, and place over the top. Press down gently until the kraut is completely submerged in the brine. *If using a plate, you can weigh it down with a boiled stone, or a clean jar filled with water.*

8. Using a clean cloth or towel, cover the top of the crock and secure it with twine. (If using jars, a bit of cheesecloth tied over the top works fine). *When fermenting, the kraut will bubble and release gas, and you will smell this especially during the first week.*

9. Place the crock in a cool, dark place and let it sit for 1-4 weeks. **taste is subjective, experiment and make it how you like it!**

10. Check the kraut and brine level once a week, pulling some out to taste to see exactly how you like it. The longer it sits, the less sweet it becomes, and the more it gets that trademark sauerkraut sourness and tang.

11. If you keep the sauerkraut under brine, you can store your kraut *almost indefinitely* in the fridge; the cold will slow the fermentation process. ***If there is any "scum" on the top of the brine, just scoop it out, and the kraut underneath will be fine to eat.***

Note: if your brine level gets too low, dissolve 1 tsp. salt to one cup water, and add directly to kraut as needed.



FERMENTING 101

Simple, healthful foods!

WHAT IS FERMENTATION?

Fermentation is an age old practice that humans have been experimenting with for thousands of years. This process makes food more easily digestible, richer in beneficial bacteria, and ultimately more nourishing. The transformation in the food increases the bioavailability of nutrients and prevents spoilage from occurring - very important in the days before refrigeration.

Good bacteria provide a biochemical change which creates an unsavory, acidic environment for the bad bacteria that can spoil food and make us sick. Ever have sourdough bread, chocolate, cheese, coffee, beer, wine, or yogurt? Without the process of fermentation, these wonderful foods wouldn't exist, along with countless others around the world.

HOW DOES IT OCCUR?

Most fermented foods we are familiar with are created by an anaerobic process of certain bacteria converting sugar in the food into lactic acid. Those bacteria, *lactobacilli*, impart a satisfying, distinctly sour tang, which you might recognise after eating a bite of true sourdough bread, or a bite of plain yogurt.

However, some ferments use an added culture. For example, to make miso, you use koji (which is typically rice) inoculated with fungal spores of *Aspergillus oryzae* to inoculate the beans, and then encase it in a crock lined with salt to protect it from unwanted contaminants. The salt makes it difficult for certain microbes to live in, and keeps it from spoiling, allowing the good guys, lactobacilli, to get in there and survive that heavily salted environment.

EQUIPMENT FOR FERMENTATION:

Depending on what you are fermenting, you can use a number of different vessels, methods, or recipes. Most things are relatively easy and require little in the way of supplies, such as sauerkraut, pickled vegetables, and yogurt. Others may require more time and more specialized supplies, such as beer, wine, cheese, etc.

FIRST THING'S FIRST...

Containers and Essential Items: You will need a vessel to ferment your creation in. This could be a ceramic crock, glass jar, or food grade plastic. Bear in mind crocks are more expensive, heavy, and breakable. Glass is a bit less expensive, but can still be cumbersome and breakable. Plastic will be less of an investment, and can stand up to being dropped more than the previous options. It's up to you.

Clean Towels or Cheesecloth: When storing a fermenting food, it needs to have the ability to release gasses during the process, cloth is a good way to allow this to happen while keeping insects and dust out of your food.

Water: Be sure to use non-chlorinated, filtered water if possible, as chlorine's purpose is to kill microbes, and it doesn't discriminate between bad and beneficial. If you can smell or taste chlorine in your water, boil it, or let it evaporate overnight before using it for fermentation.

Pounder: This is a handy and useful tool when making sauerkraut. It allows you to easily bruise and mash your cabbage or vegetables in the crock or jar. Down to Earth carries a sturdy, handmade, long lasting Poplar wood pounder that works really well for this.

Salt: Sea salt or canning salt are great, avoid iodized salt, or salt containing anti-caking agents.

Thermometer: When making things such as yogurt or cheese, this is an essential item.

Books: There are plenty of great books that are full of great info and recipes to experiment with. A couple recommendations are: **Wild Fermentation by Sandor Ellix Katz** is highly recommended, and if you want something a little more detailed and in depth, **The Art of Fermentation** is brimming with history and information all about fermenting fruits, vegetables, grains, milk, beans, meats and much more.

Airlock: These inexpensive items are essential in preventing contamination from the outside atmosphere, they are filled with water to create a barrier that allows CO₂ to escape without letting in unwanted particles. They are typically used when making beer, wine, and mead.

THE (simplified) SCIENCE!



In general while fermenting, the first bacteria to show up to the party are *coliform* bacteria. As the pH drops, *leuconostoc* bacteria quickly take over the

helm, followed closely by *lactobacillus* as pH drops even lower, since *lactobacilli* thrives in a highly acidic environment that other bacteria cannot. They convert sugars and lactose into lactic acid, and the starter bacteria can no longer survive, as well as other bad bacteria. The lactose into lactic acid conversion also makes it easier for people to digest milk based products, as lactose is replaced. Thanks, lactobacilli!

EXPERIMENTING WITH CULTURED FOODS

Sauerkraut is a great starting point for those who are interested in making homemade fermented foods for the first time. It is both safe and very easy to make. It is made simply by taking chopped cabbage, and pounding or mashing it (traditionally in a crock, though many people do it in glass jars as well) with a small amount of added salt, and sometimes other additions for different flavor complexities. After pounding, the cabbage is weighed below the brine (the liquid created by mashing cabbage and salt together) and left to sit in a cool, dark place for weeks. The result is a tangy, crunchy treat that can be enjoyed on its own, or with many different foods.

Fermented vegetables are one of the easiest and safest things to make, and it is hard to go wrong. However, when experimenting with fermented foods, **Please note** that this pamphlet with the included guidelines and instructions are very basic, and you should always follow necessary and appropriate precautions when fermenting any food.

• A good rule of thumb with fermenting is: If it smells bad, or tastes bad, throw it out!

Generally, your nose knows. If you see mold, better to be safe and throw it out. Mold indicates that something has gone wrong/contamination has occurred. This typically happens when your ferment is exposed to oxygen. By properly weighing your food below the brine, you can prevent mold from occurring.



EASY GARLIC SAUERKRAUT



Simplified overview of making this healthful treat:

- 1. Make sure that all your supplies and equipment have been washed well, including your hands.**
2. Prepare 5 lbs of chopped cabbage (set aside several of the large outer leaves), measure out 3 tbsp. of salt and peel a head (the whole bulb) of garlic, and chop it roughly.
3. In your clean ceramic crock, add a couple handfuls cabbage, a small amount of the garlic, then sprinkle some of the salt over the top.