

Basic Vegetable Fermentation

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SOME BASIC FACTS

Vegetable fermentation is caused by a family of bacteria called lacto-bacilli. These bacteria consume sugars and convert them into lactic-acid and carbon dioxide. While lacto-bacilli are present on most vegetables, some have larger populations than others. The brassica family is particularly notorious for its large amounts of lacto-bacillus, and can thus be very easily fermented.

Vegetables with smaller bacterial populations (such as beets and carrots) may require a starter culture to aid fermentation. The process, however, remains quite simple. A few examples of "starter cultures" are:

- Adding pickle brine to new brine (1:1 ratio)
- Adding cabbage leaves to other vegetable ferments
- Adding whey (about 1 Tbs per quart) to a newly mixed brine

Fermentation happens at different speeds depending on outside temperature and the structure of the vegetables you are fermenting. More fibrous veggies with lower sugar and water content take longer to ferment (a few weeks-a few months). Higher sugar and water content and less fibrous veggies take less time. (3 days-1 week)

The ideal temperature range for fermentation is between 60 and 80 degrees, in the lower end, produce will ferment slowly and develop more complex flavors, in the upper range, veggies will ferment quickly, and might even become undesirably mushy.

MATERIALS

- *Crocks/fermenting vessels:* ceramic and glass are the best materials, while food grade plastic is a good second option. Wide mouth mason jars are perfect for small batches while ceramic crocks are best for 2+gallons. Keep in mind that the top layer of any ferment will mold, so the wider your vessel, the more surface area you risk losing to mold. This is why it is best to ferment small batches in narrower containers, saving the big stuff for crocks/buckets.
- *Salt:* Finely ground (so it dissolves easily) and non-iodized (so it doesn't kill the beneficial bacteria). Must be completely additive free. Read the ingredients to verify the only one is "salt," or "sea salt."
- *Water:* Water should ideally be unchlorinated. If you are concerned about your tap water, you can boil it, or use a water filter.
- *Produce:* Select your vegetables at the peak of their season; fresh, healthy, happy vegetables make the best pickles. Using local and chemical free produce is the best way to ensure that you will be working with healthy populations of beneficial bacteria. Conventional agriculture tends to wax produce for shipping, which doesn't bode well for the little guys (lactobacilli).

- *Toppers/weight*: figuring out how to weigh down your fermenting vegetables so that they are below their brine is the most creative part of fermentation. These objects should cover most of the surface area atop your ferment while still allowing CO2 to escape. Materials you should avoid are non food-grade plastics and metals. Wooden boards, boiled stones, and water-filled glass jars are all approved options.
- *Cheesecloth*: to allow CO2 to escape without allowing dust and insects to enter.

VERY BASIC RECIPES

Krauting (makes ½ gallon)

5 lbs cabbage, red or green

2-3 Tbs salt

1. Slice cabbage as thin as desired (the thinner the slices the faster it will ferment)
2. Place in a bowl and for every ½ head of cabbage, sprinkle with 1.5 Tbs pickling salt and mix with clean hands.
3. Continue to slice and add salt until you've used all your cabbage. Massage cabbage with your hands. You'll see the cabbage begin to sweat water.
4. Pack cabbage into jar/fermenting vessel; press it down as you go to draw out more brine.
5. Once all cabbage is packed, press until there is enough brine that the cabbage is submerged.
6. Place the topper of your choice on top, making sure brine is above cabbage, and cover with cheesecloth.

Sauerkraut is a culture that you can allow to ferment in very different ways. You can create a crunchy "new" kraut that's not too sour and not too soggy, beginning to taste it after its first week.

Alternatively, you can allow it to ferment for 3 or more cold winter months and it'll have a wonderful, complex flavor. This is entirely your choice. The important thing is that you check in on your kraut throughout its fermentation process!

7. Once your kraut has reached the desired saueriness/texture, remove your topper, scrape off any mold, seal your jar, and place it in the fridge!

Brining:

For 1 quart pickles prepare 2 cups of brine: 1 Tbs salt to 2 cups of water.

For 1 gallon of pickles prepare ½ gallon of brine: ½ cup salt to ½ gallon water.

1. Pack vegetables and spices into jar so they are tightly packed and all are firmly below lip of jar.
2. Mix brine by dissolving salt in a small amount of *hot* water. Once dissolved, add the remaining water *cold* to the solution. Pour brine over vegetables until completely submerged.
3. Follow kraut steps 6-7 with, beginning to check ferments for desired taste/texture at 1 week.