

# “Sour Power!” Classic Sauerkraut Fermentation

Executive Summary: Chop, Salt, Pack, (Brine?) Wait, Eat

## Supplies:

- Large Bowl (Glass, Stainless Steel, Ceramic or Wood is best)
- Quart Size Mason Jar (Lid Optional)
- Knife, Cutting Board, measuring spoons, measuring cup

## Optional:

- Scale to measure grams or ounces of salt & to weigh cabbage
- Large spoon for mixing
- Special Fermentation Vessel (Glass, Ceramic or Wood are best)  
**Examples:** Harsch Gartopf Crock, Pickl-It Jar w/Airlock Lid, Fido Jars, Ceramic Crock Pot
- Weight to help submerge cabbage in jar  
Examples: stone (cleaned & boiled to sanitize), glass or ceramic disk, small plate, baggie filled w/brine or water, etc.

## Ingredients:

1 medium head cabbage, chopped (approximately **1 ¼ lbs/ 20 oz. or 600 grams**)

Salt (Sea Salt or Pickling/Canning Salt **only**):

**How much salt\* to sprinkle on chopped cabbage:** (Use this formula to create 2% salinity)

**Formula:** Total weight of chopped cabbage/50 (For this recipe: 600g/50 = **12 grams salt**)

**Optional:** (If Need To Add Brine To Mixture To Submerge Cabbage In Jar)

1 Quart Water (Filtered/Distilled, or boiled 20 minutes to **remove chlorine**, then cooled to room temp).

**How much salt to add to water to create 2% brine:** Approx. 19 grams or 1 level Tbsp. per Quart.

## Step By Step:

- 1) **Cabbage:** Organic/no chemicals best, “Chopper’s Choice”, smaller pieces = faster fermentation
- 2) **Measure & Mix in Salt:** Considerations – Sea Salt or pickling salt (avoid anti-caking agents & additives that inhibit ferment), Salt to taste vs. measured. NOT recommended to do a no salt ferment, since salt creates inhospitable environment for pathogens and I wouldn’t go below 1% salinity myself. This recipe is for 2%, but for more info on salt, **see “Salt Talk” below**).
- 3) **Waiting vs. Pounding:** Being lazy, I like to let the salt do the work of extracting the water from the cabbage to make my brine, which can take ½ hour to ½ day. I also don’t like to pound the texture out of my kraut. If you are in a hurry or want a limper kraut, go ahead and pound/squeeze/mash it. **Note:** If you cut kraut thin, water extracts faster.
- 4) **Pack Cabbage TIGHTLY In Jar (About ¾ Full):** Press down using hands or meat tenderizer or similar tool. Goal is to create an anaerobic environment for the cabbage... get cabbage compressed, air out, brine covering top entirely. Sometimes, due to dry/old cabbage and/or impatience...there is not enough water produced to cover the cabbage. In this case see next step “Adding Brine”.
- 5) **To Brine or Not To Brine?** You must SUBMERGE VEGGIES to create anaerobic environment for shredded cabbage... so if not enough brine created from moisture in cabbage, need to make a brine. For 2% brine, it’s 19 grams of salt to 1 quart of un-chlorinated water (since chlorine kills lacto-bacillus bacteria.) Can boil tap water for 20 minutes to get rid of chlorine, but then must cool it to room temp before pouring brine onto cabbage or you will kill the lacto-bacillus in your ferment.
- 6) **To Inoculate or Not?** (Using **Starter Cultures?** Or Active Brine From Last Batch?) Pros & Cons  
When recipes advise a 3 day ferment, it’s usually because they have used a Starter Culture...and that is a different process...skips first phase of bacterial colony formation and speeds up fermentation. Cons: Affects texture and final beneficial bacterial content (diversity, quantity & type) of final fermented product. Pros: Fast. Easy. Better than not fermenting! My preference is “au naturel” ...no starters!
- 7) **Jar Talk** or Creating an Anaerobic Environment: **Caution:** Don’t put lid on jar except to drive your kraut home! If you leave lid on during fermentation process, **your jar could explode**. Kraut needs to be able to off-gas the CO2 created by fermentation process!! Lots of different ways to do this...some more effective than others. **Options & Pros/Cons of using** - cabbage leaf/small jar in big jar, plastic baggie filled w/brine, saran wrap, airlocks, special crocks, weights, fidos, crock pots w/plates, rocks, glass disks, other?
- 8) **Cover & Wait – NOTE:** Light exposure degrades Vitamin C, so put in dark place if using jars. Most homes are the “right/ideal” temperature for fermenting...around 65-71 Fahrenheit. How long to ferment? You’ll see suggestions from 3 days to 6 months. **Hotter environment = faster ferment and usually softening** (not the good kind) and cooler is especially important in first 3-7 days. Slow & steady ferment is better. Too cold stops all activity. Ideally, due to progression of colonies of microbes, you want to go

at least 2 weeks – 4 weeks. Most health-benefiting bacteria don't colonize til **after** 2 weeks (Leuconostoc taken over by Lactobacillus Plantarum and after 3 weeks you also have established Lactobacillus Brevis).... Aside from that, okay to eat it/stop fermentation at any time in the process.

- 9) **A Word About Safety:** Safer than canning by far! For first phase of fermentation, salt creates safe environment, then once lacto-bacillus take over, they create lactic acid, & then the acidity of the kraut also makes it inhospitable to pathogens. Lacto-Fermentation process creates a pH of less than 4.6 and botulism and other toxins can't survive. **Yeast vs. Molds.** Yeasts not dangerous, but can have softening effect, looks like **white** scum on top, hard to make home ferment & not get some. Sandor Katz ("Wild Fermentation" author) suggests skimming it off the top. Need 100% anaerobic for NO yeast to grow.. Mold...beware. Smells bad? Throw it out. Pink scum is bad. Inherently safe due to good bacteria outnumbering bad, and to creation of conditions preferred by good guys. Researchers inoculated active sauerkraut w/the live BAD strain of E.coli bacteria and a short time later, there were NO TRACES of the E.coli. It never established. Gotta like that! So ...relax!
- 10) **Eat ANYtime:** One way to learn about fermentation is to sample your kraut periodically while it is fermenting. Some taste test daily, but if you check it every 3-5 days, you really get a sense of what YOUR taste buds prefer re: vinegary flavor (acidity), salinity, texture, etc.
- 11) **Stop Fermenting!** When you reach the taste you like best, stop the fermenting by putting your fkraut in a sealed jar & popping it in the fridge. Please don't heat the kraut, as that will kill everything beneficial in it! Kraut will last indefinitely in your fridge, but you want a date, so I'll say "6 months" ,,easily. (I have year old ferments in my fridge, safe & still delicious.) Hopefully you'll eat yours long before you have to worry about it "going bad". **NOTE:** After 60 days of fermenting, the beneficial bacteria count starts dropping precipitously, so you may wish to consider this as well.
- 12) **Bonus Information:** You can ferment any vegetable w/the information I provided you here. If it's a veggie that doesn't leach water like cabbage does, you will simply cover it all in your brine solution. This is how you make pickles, for example. **You can also mix up a lot of different veggies in your kraut, for example: beets, carrots, onions, garlic & various spices (caraway seeds, dill, mustard seeds, hot pepper flakes).**
- 13) **No Time To Ferment Your Own Veggies?** Don't Despair! **You can buy fermented veggies,** usually at the farmer's market or at health food stores, BUT they are ONLY found in the refrigerated section. (See note above about exploding jars). Look for: Great Fermentations!, Bubbies, Wild Brine & Farmhouse Culture products. Still not sure? If vinegar (acetic acid) is an ingredient, it's not fermented!

**\*SALT CHAT: How Much Salt? You Have Lots of Leeway!** Commonly you'll see kraut & other veggie ferment recipes with anywhere from 1-8% salinity range, but can be as low as 0% and as high as your taste buds allow. I don't recommend using less than a 1% brine as the salt is part of creating a hostile environment to pathogens, especially during the first phase of fermentation. More salt = more crunchy although you can hit the point where you inhibit ANY bacterial growth, good OR bad!

**A Brine Recipe:** To create a **brine of 2% salinity**, add 19 grams of salt to a quart of water (or 1 level Tbsp of pickling/canning salt) & stir until fully dissolved. Do not put warm or hot brine on veggies, must be cool or room temperature. (While 20 grams is about 1 level Tbsp of pickling salt... weighing salt is more accurate than measuring, as different salts are different size grains.) Sandor Katz, in his book **Wild Fermentation**, creates a saltier kraut brine, using 15 grams salt per cup of water (6% salinity), as well as providing recipes for alternatives to use instead of salt. He recommends "salt to taste". I don't recommend that fermenting novices go below 1% salinity (for safety reasons).

### **My Favorite Websites:**

Wild Fermentation (Sandor Katz): [www.wildfermentation.com](http://www.wildfermentation.com)

Fermentation Recipes & Tips: <http://www.picklemetoo.com>

Cultures For Health: [www.culturesforhealth.com](http://www.culturesforhealth.com) (Good place to buy fermentation equipment/supplies)

Weston A. Price Foundation: [www.westonaprice.org](http://www.westonaprice.org)

Cat's Website - Great Fermentations! [www.greatfermentations.net](http://www.greatfermentations.net) /<http://greenforkmarmersmarket.locallygrown.net>

### **Good Reads:**

The Art of Fermentation and Wild Fermentation, by Sandor Katz

Nourishing Traditions (Cookbook) by Sally Fallon