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Krautsourcing: The Salt of the Earth

Sauerkraut is fermented with salt, although it's not essential. Sauerkraut fermentation can still occur with just the lactic acid-producing bacteria that have hitched a ride in on your cabbage. (LABs). That said, salt performs some important function in the fermentation process, so I always see some, but you can get away with using less than some recipes call for. Furthermore, salt is not as evil as first thought, as more studies are showing.[1]

Salt: essential nutrient

The Australian National Health and Medical Research Council has set an 'Adequate Intake' of 460-920mg of sodium per day. That's about to 1.15–2.3 grams of salt. A 'Suggested Dietary Target' of 1600 mg of sodium, 4g of salt has been set for Australian adults.2

Sodium is a vital nutrient, essential for maintaining normal cell metabolism (the sum total of all the biochemical reactions taking place within a cell), regulation of blood plasma levels, body fluid balance and cardiovascular function. Sodium and chloride ions also play an important role in the nervous system, allowing for nerve transmission as well as mechanical movement. Salt is also important in digestive processes, as Chloride ions provided by salt are secreted in the gastric juice as hydrochloric acid.[3]

Salt: Three roles in Sauerkraut.

Contrary to what you might think, salt is not a preservative in Sauerkraut. It's the fermentation process and LABs created through fermentation that preserve and extend the shelf-life of fermented products. Lactic acid is a great preservative.

In the making of sauerkraut, salt helps "pull" water from the cabbage to make the brine for the cabbage to be fermented in. the Brine is so very important, as lacto-fermentation is anaerobic (without air) so you need to have that cabbage under the brine for it to happen, and not to get a lot of mouldy cabbage instead.

References:
http://www.abc.net.au/science/articles/2011/11/23/3374171.htm
http://www.nutritionaustralia.org/national/frequently-asked-questions/salt-and-hypertension
https://chriskresser.com/shaking-up-the-salt-myth-the-human-need-for-salt/

Salt promotes the fermenting process by supporting and benefitting the lactic-acid forming bacteria (LABs) we want in our Sauerkraut and inhibiting the growth of undesirable microorganisms, including mould spores.

Salt also hardens pectins (a structural sugar that keeps the structure and form of plants) in the cabbage, leaving them crunchy even after they have fermented. Personally, crunchy-kraut is better than soft kraut, but some people do like a soft-sauerkraut.

How much salt should I use in my Sauerkraut?

Salt is not essential for Sauerkraut to ferment, although it is a big help to get the right balance of bacteria in your 'kraut and a nice crunchy product at the end.

There are a lot of schools of thought around how much salt to use, but here are some guidelines:

For those who like exactness: As a starting point, try 2-3 level tablespoons (8-12 teaspoons) of salt per 2.5 kilos of cabbage. Different salts weigh and measure different amounts though (ie. tables salt vs. salt flakes vs. celtic sea salt), so be sure to err on the side of caution and taste it as you go. If you are using a very fine salt, err on the lower end of the scale and towards the higher end if using salt flakes. Don't use rock salt, you'll never get it to dissolve in the brine.

If you're doing smaller batches, here is a table of amounts to weights:

Salt in teaspoons	**Cabbage weight in grams**
8-12	2500
6.5-9.5	2000
5-7	1500
3-5	1000
1.5-2.5	500

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If you like to weigh things: Sandor Katz, author of *The Art of Fermentation* and *Wild Fermentation* recommends a 1.5-2% salt to weight of cabbage ratio for Sauerkraut.

Salt in grams 1.5%-2%	**Cabbage in grams**
37.5-50	2500
30-40	2000
22.5-30	1500
15-20	1000
7.5.-10	500

For those who like to experiment: salt to taste. It's much easier to put more salt in than to take it out, so start with a teaspoon per cabbage/half cabbage and mix it in and give you cabbage a good massage to start the water coming out of the cabbage. Taste the cabbage/brine that is forming and see if it is to your liking.

DON'T WORRY TOO MUCH ABOUT THE SALT - just make sure you don't use too much.