

Alex Lewin

**Real Food Fermentation
Kombucha, Kefir, and Beyond**

**Instagram: @lactoferment
<http://FeedMeLikeYouMeanIt.com/>**

REAL FOOD FERMENTATION





Alex Lewin

Real Food Fermentation

REVISED & EXPANDED

Preserving Whole Fresh Food
with Live Cultures in Your
Home Kitchen

sauerkraut
kimchi
kombucha
yogurt
kefir
hard apple cider
crème fraîche
sourdough
and more



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KOMBUCHA, KEFIR, AND BEYOND

A FUN &
FLAVORFUL
GUIDE TO
FERMENTING
your own
PROBIOTIC
BEVERAGES
at home



ALEX LEWIN & RAQUEL GUAJARDO

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Books are available at finer bookstores everywhere!

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About Me

- studied math at university
- cooking school (inspired by *Kitchen Confidential!*)
- IIN
- food sustainability (*Omnivore's Dilemma*, *The Revolution Will Not Be Microwaved*)
- fermentation (*Wild Fermentation*)
- real food (*Nourishing Traditions*)
- local food, food justice, food sovereignty, self-reliance, self-sufficiency, local autonomy, etc.
- plant and spirit world

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Quick Concepts

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- Fermentation is transformation of food by the action of microbes
- Microbes transform foods the same way our digestive systems do—using enzymes, which are special proteins that catalyze chemical reactions

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- Yeasts transform sugar (carbs) into alcohol and CO_2
- Bacteria transform sugars and starches (carbs) into acids and CO_2 , and also into alcohol (less)
- Molds are complicated! They can break down carbs, proteins, and fats.

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**Lactic acid fermentation of
vegetables can be very easy.**

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- Microbes (including lactic acid bacteria, and yeasts) are everywhere
- Salt inhibits "bad microbes" more than "good microbes" (also affects enzyme activity)
- Air speeds spoilage
- Refrigerator slows everything
- It is safe to experiment

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Brined whole (smallish) vegetables

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**What vegetable is
kind of rad?**

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Radish!

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Some math

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- For many/most vegetable ferments, 2% salt by weight is a good starting point. **TWO PERCENT.** (That is the most important number for vegetable ferments.)
- Vegetables have about the same density as water.

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So if you are brining vegetables, and you want 2% salt, and you are filling the whole vessel, then you don't need to measure the vegetables—just measure the vessel.

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You need the same amount of salt whether it's mostly water or mostly vegetables, because the salt will diffuse similarly through the vegetables and the water. (Remember, vegetables are mostly water.)

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How much salt should we use to get
2% salt in a pint jar?

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**"A pint's a pound the world around,"
the old saying goes. Although actually
it isn't. But it's pretty close. So a pint of
water is about 450g. And 2% of 450g is
the same as 1% of 900g. And 1% of 900
is 9. So 9 grams.**

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**(Being able to do calculations like this
on the fly can be helpful. But
it's not necessary.)**

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We can measure 9 grams with a kitchen scale (that's how I would usually do it). Or...

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1 tsp of kosher salt (or fine Himalayan salt) weighs about 6g. So 1.5 tsp of kosher salt weighs 9g. (It's not the salt that's kosher by the way...) (Different salts can be different densities, which is why weighing is more accurate.)

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Some salt contains more trace minerals than others. This can be good for our health. It can occasionally mess with our fermentation for chemical reasons. Regardless, the ratios are not enough to mess with our math.

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1. Add 1.5 tsp salt to pint jar with a bit of water so that it can dissolve, close lid, shake
2. Add radishes
3. Top off with water (leave 1/2"–1" of space)
4. Close lid
5. Label with tape and marker
6. Put it somewhere you'll see it daily
7. Burp daily
8. Wait until sour (5–10 days? or longer)
9. Refrigerate once you decide it's done

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You don't want the veg permanently above the surface of the water, at least not until it's fermented a bit. You can use "pickling weights". But really, as long as all surfaces get submerged daily, that will drown mold spores. So just give it a push or a shake every day until it's fermented.

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IMO less equipment = better.

Lowering barriers to fermentation!

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This same technique should work in general with small whole vegetables, or with chunks of bigger vegetables. (Green beans, carrots, "giardiniera".) Some vegetables do tend to get soft (watery veg like peppers, cucumbers, zucchini) so you may want to take measures to keep them crisper (tannins aka "pickling spices"; more salt). (That's another topic!)

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**Do you need to rinse or peel the veg?
Rinsing is never a bad idea. Peeling is
your choice.**

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Health benefits of fermented vegetables

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- The microbes themselves. Some of them may pass through to the gut. Many more of them die along the way, but bits and pieces of these dead microbes may feed the live microbes in the gut. We are discovering new things about this every year. Our understanding is actively growing.
- Metabolic byproducts of microbes (enzymes, vitamins)

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- Fermented foods are easier to digest, because they are pre-digested. Eg., the "gas" escapes before you eat it rather than being trapped in your intestine
- Bioavailability: Fermentation can break down compounds (eg., phytic acid) that bind minerals.
- The acidity of fermented vegetables, and the presence of the fermentation microbes, can inhibit pathogens.
- Foods preserved via fermentation often do not need preservative chemicals (beyond salt).

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**Different kinds of fermented foods offer
different health benefits.**

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- **Kombucha seems to help fix many digestive problems for many people. Is it the acids? Is it the microbes? Is it some other trace compounds? (Does it ultimately matter?)**
- **Unfermented pasteurized milk is difficult for many people to digest. This is normal. Fermented is much more digestible, giving us access to the rich supply of nutrients in dairy.**
- **Slow-fermented grains (including old-fashioned sourdough bread) similarly give us access to a great food source that is otherwise potentially problematic.**

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- Soy ferments offer some great benefits. For instance, natto, a specific soy ferment, is the sole source of a special enzyme called nattokinase (which happens to kill COVID and other viruses in a test tube). Natto also is a great source of vitamin K2 MK7.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8276596/>
- Etc. Different ferments have different benefits. There is a lot of information on the Internet, much of it somewhat accurate!

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Keep in mind that everyone is different!

**What helps one person may do nothing
for another person, or may even harm
them.**

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If you are trying to address a specific, acute problem, the first step is to get in touch with your body and understand what it's trying to tell you.

The right kind of practitioner can help you with this.

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