



FERMENTATION BASICS

Have you ever found yourself with a giant pile of pickling cucumbers, some amazing wild-harvested berries, or a Farmer's Market collection of greens, all demanding to be used RIGHT NOW? A fabulous way to preserve a seasonal harvest for enjoyment at a later time is through **fermentation**.

Fermentation is an ancient art of food preservation. Long before there were canning jars, chest freezers, or food dehydrators, cultures around the world had methods for fermenting food in order to preserve the harvest and stay healthy.

Did you know that your body is host to a community of microorganisms? When they are in a healthy balance, the microorganisms in your gut affect your mood, break down food into nutrients for your body, regulate your immune system, and so much more.

Many of the foods we eat and enjoy on a regular basis have undergone the process of fermentation, which simply is the action of living bacteria and yeasts on organic matter, for instance:

- Cheese
- Salami
- Sauerkraut
- Wine
- Sourdough Bread
- Water Kefir
- Pickles

We all know that yeasts and bacteria can spoil food if left unchecked. The art of fermentation involves creating just the right conditions to encourage the growth of just the beneficial ones.

A quick primer on Bacteria and Yeast, and how they contribute to the fermentation process:

Bacteria - Are microscopic organisms that are cultured to make foods sour tasting, like yogurt, sour pickles, vinegar, etc. Their digestive process creates carbon dioxide, lactic acid and acetic acid as by-products, among others.

Yeasts - Are microscopic fungi that are cultivated for alcohol production or when you want gas bubbles, as in leavened bread or carbonated sodas. Their by-products are alcohol, carbon dioxide, and amino acids and organic compounds.

WHY FERMENT?

What is the benefit of taking fresh food and subjecting it to the diverse processes of fermentation? There are many benefits and I'll list a few:

- **Food Enrichment** - Vitamins are preserved and sometimes produced via fermentation. Amino acids are formed, which makes more complete proteins.
- **Food Digestibility** - Fermentation is a form of pre-digestion, which helps our bodies break down food into smaller digestible parts. Lactose, gluten, and soy particularly benefit from this pre-digestion.
- **Health** - Beneficial ferment organisms actually inhibit pathogenic bacteria. Some toxins are broken down as well.
- **Live Cultures** - Fermented foods can help replenish our intestinal flora and fauna, which is particularly important after taking a round of antibiotics.
- **Food Preservation** - Both the acidity and the alcohol produced during fermentation preserves food for months or years. Hard cheese preserves fresh milk; Wine preserves fresh fruit or juices, etc.
- **Food Security and Local Economy** - By their nature, fermented foods are best produced on a small scale. They are value-added products that can be the

basis for a small business or home-based cottage industry. Plus, wild cultures are free for the capturing!

- **Food Taste and Texture** - Imagine a world without cheese, or wine! Fermentation makes complex, sour, salty, creamy, tangy, aromatic, rich, pungent, and yummy additions to a local food diet.

Fermentation can be an extremely complex process, or an incredibly simple one. Sauerkraut is perhaps the best known vegetable lacto-ferment, a very simple recipe consisting of salt and cabbage, and perhaps some spices. But so many other types of vegetables can be lacto-fermented as a means of preserving the harvest, enhancing flavor, and increasing digestibility and nutrient content.

In the Lacto-Fermented Vegetables video you'll learn how to ferment vegetables in two ways, using very simple ingredients - salt, vegetables, water, and some spices.

RECIPES

Lacto-Fermented Sauerkraut

- 1) Start with the freshest cabbage you can find. Green or red head cabbage is perfect, but you can also use Napa cabbage.
- 2) Slice, grate, or food process your cabbage of choice. I like my sauerkraut on the chunkier side, so I use a knife to coarsely chop the cabbage.
- 3) For every 5 lbs of sliced cabbage, sprinkle 3 tbsp. of salt over the top.
- 4) Place the cabbage/salt in a large bowl, and massage the cabbage thoroughly for 3-4 minutes, then let it sit for 10-15 minutes so the cabbage can release its natural juices.
- 5) Pack the cabbage tightly in a glass jar or ceramic crock, frequently pounding it down with either your fist, or a kraut pounder.

6) Loosely place a lid on the jar or crock, and store on your kitchen counter, where you can check on it each day. You want to make sure the cabbage is always covered by its liquid. Some people place a clean rock or glass weight in their jar to keep the cabbage weighted down. You can also add some salt brine solution to top off the liquid level.

7) After a few days, you will notice some bubbling. This is a great sign of lacto-fermentation! When the kraut has fermented to your liking, transfer it to a cool place. I prefer to move it to cool storage on the earlier side, so my sauerkraut remains nice and crisp.

Lacto-Fermented Vegetables in a Salt Brine

1) Place sliced vegetables in a wide mouth quart-sized mason jar.

2) Mix up your salt brine. The brine is a salty solution that discourages nasty bacteria, while encouraging the beneficial bacteria of the lacto-fermentation process. **To make a brine, dissolve 3 TBSP salt in a quart of water, or for a larger batch, dissolve 3/4 cup salt in one gallon of water.**

3) Place spices in the jar, and add enough brine to completely cover the veggies and spices. You may want to use a clean rock or glass circle to keep the vegetables weighted down.

4) Loosely cover with a mason jar lid or cloth. Do not tighten the lid.

5) Place the jar on the counter in a spot where you can check on your fermented vegetables each day. Make sure that the vegetables remain submerged under liquid. If you don't have a glass weight, you can simply tighten the mason jar lid and invert the jar a few times before returning it to the counter.

6) After 5-7 days, do a taste test. I like to remove my fermented vegetables from the counter when they are still very crisp, but it's a matter of personal preference!

7) Store pickles in the refrigerator, root cellar, basement, or other cool storage, and enjoy!

RESOURCES

When you're ready to tackle some other types of ferments, here are some resources:

Books:

In Defense of Food by Michael Pollan

Wild Fermentation by Sandor Elix Katz

The Art of Fermentation by Sandor Elix Katz

Home Cheese Making by Ricki Carroll

Bread Alone by Daniel Leader

Websites:

www.wildfermentation.com

GEM Cultures <http://www.gemcultures.com/>

Cultures for Health: <http://www.culturesforhealth.com/>