

## Wild Fermentation

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In 1992, Louise Frazier presented a workshop on naturally fermented vegetables at the NOFA-NY winter conference and we published several follow-up articles with recipes on these pages and repeated them in 1996. *Nourishing Traditions* by Sally Fallon introduced us to more recipes and the nutritional aspects of fermentation for grains and dairy. *Keeping Food Fresh* added to the wide variety of possibilities, including fruit.

Lactic-Acid Fermentation has become a main event here at Whistle-Stop Gardens. We start the pickle season as soon as enough cucumbers can be harvested and end it with sauerkraut, after the harvest of the last cabbages in late fall. In between there is corn relish, salsa, juices, kvass and more. We gave a workshop for the CSA this summer which coincided with the publication of an important new book *Wild Fermentation* by Sandor Katz (All of these books complement each other and should be on your book shelf).

When an unsuspecting CSA member is here working and the conversation stumbles (accidentally, of course) on pickles, we offer a taste of the latest creation. There is a moment of quiet contemplation as the crunchy morsel explodes with juice and flavor in the subject's mouth and then she/he invariably gets pretty excited. A major revelation takes place! Tastes nothing like the commercial vinegar pickle! A lot like their grandmother's pickles (if they were so fortunate as to have an ancestor carrying on the tradition). Then we hand out recipes and talk about nutrition.

Sandor Katz, the author of *Wild Fermentation*, says that there isn't any food that can't be fermented. Eskimo fermented fish is the consistency of ice cream. It is all a matter of taste — many cultures would see our penchant for consuming milk that has been curdled and aged for 60 days (cheese) as disgusting. Katz covers everything but meat and fish: he has recipes for pickles, sauerkraut, kimchi, miso, tempeh, yogurt, kefir, cheese, sourdoughs, porridges, grain beverages, wine, cider, beer and vinegar.

Long before freezers and pressure can-

ners were introduced, people were fermenting food for long-term preservation. The Chinese were fermenting cabbage 6000 years ago and the Romans had several recipes for it. In the 1770s, on Captain James Cook's second round the world voyage, sixty barrels of kraut lasted for twenty-seven months. Not a single crew member developed scurvy which had previously caused high mortality on long sea voyages.

### Why Ferment?

The ubiquitous lactobacilli that are present on the surface of all living things, especially on leaves and roots of plants growing in or near the ground, converts the starches and sugars to lactic acid and transforms the vegetables into a product which is more digestible and more nutritious. This preserves food from decay by putrefying bacteria, but also increases its vitamin content and enhances its digestibility, promoting the growth of healthy flora throughout the intestines. These are live foods. These products are never heated so that all the beneficial enzymes are preserved as well.

*They are ever heated*—only if you make your own or have a source of fermented vegetables that are still alive. Even most commercial yogurts have no live culture left (they are pasteurized after culturing, killing the bacteria), wines and beers are pasteurized, and most of the tamari in the stores has been heated (canned) for longer shelf-life. As Katz says, "If you want live-culture fermented foods in our food-security-obsessed instant gratification age, you have to seek them out or make them yourself."

Here are, for example, a few instances of how fermentation makes for a more digestible, nutritious food:

- Raw cabbage, according to some nutritionists should not be eaten on a daily basis because of the presence of goitrogens, substances that block the formation of thyroid hormone. This in turn makes it difficult for the liver to convert the plant form of vitamin A into the animal form. Fermented cabbage is a transformed vegetable and does not have these limitations.

- All whole grains contain phytic acid, which binds with calcium, magnesium, copper, iron and especially zinc in the intestines and blocks their absorption. A diet

high in unfermented whole grains can lead to serious mineral deficiencies and bone loss. Presoaking grains before cooking and/or eating sourdough breads enables your body to utilize all the minerals in the whole grain. Make sure the sourdough is the only leavening, with no baker's yeast. Bread is cooked of course, but digestibility of the gluten and mineral absorption are greatly enhanced with sourdough.

- Another protein made more digestible by fermentation and culturing is casein or milk protein. Yogurt, kefir, soft and hard cheeses are all well-known dairy ferments. Katz also gives recipes for vegan alternatives in the dairy chapter.

*Wild Fermentation* lists an extensive number of additional health benefits including scavenging free radicals, removing toxins, creation of new nutrients, control of diarrhea and dysentery and improving the immune function of anyone challenged by disease.

### What About Vinegar Pickles?

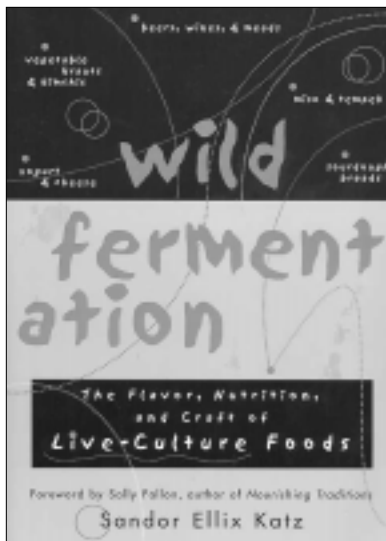
Vinegar, which is itself a product of lactic acid fermentation, is used to preserve vegetables, but the vegetables themselves have not been acted on by the lactic acid. In the past, pickles were always fermented by the older, lactic acid fermentation. When the consolidation and industrialization of the food system demanded a product with a longer shelf-life outside of the cool cellars of homemakers, they were drained and put into a vinegar solution for long term preservation, storage and shipment. Today they are just preserved with vinegar without any fermentation and pressure canned as well. Lactic acid fermented pickles and vinegar pickles are really not comparable foods.

### More than Kraut

*Wild Fermentation*, is an important introduction to the many types and flavors of fermented food. Each chapter is full of references and suggested further reading. But just as important are the politically-charged issues that Katz would like us to consider. The book is written for us folks who feel marginalized by the industrialized food system. "Social change is another form of fermentation...envision yourself as an agent for change...The life-affirming power of these basic foods contrasts sharply with the lifeless, industrially

processed foods that fill supermarket shelves. Draw inspiration from the action of bacteria and yeast, and make your life a transformative process.” This isn’t for every reader, but it resonated with us.

Fermentation is less science and more art, and therein lies its challenge and excitement. Eliot Coleman, in the introduction to *Keeping Food Fresh* says that fermentation is a “poetic” method of preservation because it maintains and enhances the life in food. Opening a jar of kraut that has been fermenting and developing its unique flavors can brighten the dreariest Winter day. You have got to taste it!



### Highly Recommended Books:

*Keeping Food Fresh—Old World Techniques and Recipes.* Chelsea Green Publishing. 800-639-4099. Karen Kerney says the recipe from this book for “Sauerkraut from Whole Cabbage” is “fantastic.”

*Nourishing Traditions—The Cookbook that Challenges Politically Correct Nutrition and the Diet Dictocrats.* Sally Fallon. New Trends Publishing. 877-707-1776

*Wild Fermentation: The Flavor, Nutrition and Craft of Live-Culture Foods.* Sandor Ellix Katz. Chelsea Green Publishing. 800-639-4099

### Some General Guidelines

In some ways, lactic acid fermentation is so simple, that it is almost unnecessary to hold a workshop or to publish recipes. However, there are a few simple guidelines to follow and then you can use your imagination. Many factors can affect the outcome of your fermented products: freshness and condition of the vegetables, amount of salt in the brine, and the amount of wild microorganisms floating around your environment.

- Use only fresh, organically grown vegetables and fruits, herbs and spices.
- Use water from a good source without water softening salts or chlorine.
- Salt (Celtic sea salt is highly recommended)
- Clean utensils, hands and fermenting vessels

### Recipes

Here are two variations on the Sauerkraut theme that have been adapted from *Nourishing Traditions* and utilize seasonally available vegetables, plus one for cider and two for grains. Next summer we will publish a recipe for lacto-fermented Corn Relish, Open Jar Dill Pickles and Salsa.

#### Korean Sauerkraut

*Kimchi* (makes 2 quarts)

- 1 head Napa or other cabbage, cored, shredded or chopped
- 1 bunch green onions, chopped or onion cut in half and thinly sliced
- 1 cup carrots, grated
- 1/2 cup daikon radish, grated (optional)
- 1 tablespoon (or more) freshly grated ginger
- 3 cloves garlic, peeled and minced
- 1/2 teaspoon dried chile flakes
- 1 tablespoon sea salt
- 4 tablespoons whey\* (if not available, use an additional 1 tablespoon salt)

Place vegetables, ginger, red chile flakes, sea salt and whey in a bowl and press with your hands or a wooden pounder or a meat hammer to release juices. Place in a quart-sized, wide-mouth mason jars and press down firmly with a pounder or meat hammer until juices come to the top of the cabbage. The top of the vegetables should be at least 1 inch below the top of the jar. Cover tightly and keep at room temperature for about 3 days before transferring to cold storage. Ready to eat in about a week or two.

#### Latin American Sauerkraut

*Cortido* (makes 2 quarts)

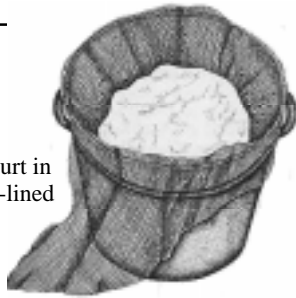
- 1 large cabbage, cored and shredded
- 1 cup carrots, grated
- 2 medium onions, quartered lengthwise and very finely sliced
- 1 tablespoon dried oregano
- 1 teaspoon cumin seed
- 1/4 cup chopped cilantro
- 1/4-1/2 teaspoon red pepper flakes
- 1 tablespoon sea salt
- 4 tablespoons whey\* (if not available, use an additional 1 tablespoon salt)

This delicious spicy condiment goes beautifully with Mexican and Latin American food of all types. It is traditionally made with pineapple vinegar but can also be prepared with whey and salt. Like traditional sauerkraut, cortido improves with age.

In a large bowl mix cabbage with carrots, onions, oregano, cumin seed, cilantro, red chile flakes, sea salt and whey. Using your hands press and knead for about 10 minutes to release juices. Place in 2 quart-sized, widemouth mason jars and press down firmly with a pounder or meat hammer until juices come to the top of the cabbage. The top of the cabbage mixture should be at least 1 inch below the top of the jars. Cover tightly and keep at room temperature for about 3 days before transferring to cold storage.

—from *Nourishing Traditions* by Sally Fallon

Straining yogurt in a cheesecloth-lined colander



## \*Whey

Line a colander with a couple of layers of dampened cheese cloth. Gently pour yogurt (organic, unflavored and unsweetened) into the lined colander, and let it drain into a bowl. Cover the colander to keep the flies off. The liquid in the bowl is whey, and the thick yogurt is yogurt cheese or labneh which can be used like cream cheese or you can add herbs and make a spread or dip. The longer you allow the yogurt to drain, the more solid the cheese will be and the more whey you will get. 2 cups of yogurt will yield about 1 cup of whey.

## Ogi (African Millet Porridge)

—from *Wild Fermentation*

Thick, starchy porridges are a staple food in Africa. Everywhere there you see and hear women pounding on grains and cassava roots, and most meals feature the resulting porridges as a central element. Millet porridge is called *ogi* in parts of West Africa and *uji* in East Africa. In Africa, porridges are generally served thick, with a solid consistency that you can shape and eat with your fingers, and are often accompanied by saucy stews. I have adopted *ogi* as a quick and hearty breakfast food that I enjoy savory, with butter, garlic, kefir, salt, and pepper.

2 cups millet

Water

Sea salt

1. Coarsely grind millet using a grain mill or other grinding technology.

2. Soak the millet in about 4 cups/ 1 liter of water. Soaking time can range from about 24 hours to 1 week, and the taste will become progressively more sour as the days pass. I mix up a batch, let it ferment, and cook it a little at a time over the course of a week or so.

3. When you are ready to make porridge, boil about 1/2 cup of water per serving, with a dash of salt.

4. Mix the fermented millet blend to a uniform consistency and add about 2/3 cup per serving to the boiling water. Lower heat and stir constantly to prevent burning, until the porridge cooks and thickens, just a few minutes. Add more water as needed to reach the desired consistency. You can enjoy this porridge thick or thin, as you prefer.

(If you don't own a grain mill, soak the millet for 24-48 hours in water to cover and salt, drain, and wet-grind in a food processor, adding enough water so it is the consistency of heavy cream. We soak the millet with a tablespoon of whey up to 2 days before grinding in the food processor. If porridge doesn't appeal to you, pour the cooked *Ogi* into a shallow baking dish, let cool, cut into pieces and fry as you would polenta.)

## Apple Cider

—from *Nourishing Traditions*

Makes about 1 gallon. (We have found that for good results you must use high quality cider or apples. Do not use moldy or off-tasting apples or cider. This is nonalcoholic, or at least minimally so, due to the whey and salt.)

about 4 dozen organic apples or a gallon of the best, unpasteurized, organic cider you can find

1 heaping tablespoon sea salt

1/2 cup whey

As it is becoming increasingly difficult to obtain unpasteurized apple juice, we recommend starting from scratch with organic apples. Wash the apples, cut into quarters, remove the cores and pass them through a juicer. A great deal of foam will rise to the top of the juice—remove as much of this as possible with a spoon. Strain the juice into a very clean large bowl and stir in salt and whey. Cover and leave at room temperature for 3 days. Skim off any foam that may have risen to the top. Pour into very clean quart or half gallon glass jars, cover tightly and refrigerate or store in root cellar or cold room. Flavors will develop slowly over several weeks. The cider will eventually develop a rich buttery taste and may become slightly effervescent. The sediment will fall to the bottom of the containers and should remain there if the cider is poured out carefully.

## Fermented, Wheat-free Waffles

Based on the Indian dumplings, *idli*. The fermenting time is flexible, depending on room temperatures. This is a savory waffle, great with eggs, smoked meats, cheese or pickles.

1/2 cup lentils (the small French lentils are the mildest, but you could use almost any dried bean or pea, but whatever you use, check carefully for stones.)

1 cup brown rice

water

1 tablespoon whey

2 eggs

2 tablespoons butter, coconut oil or lard

1/2 teaspoon sea salt

1/2 teaspoon baking powder

1. Soak rice and lentils in quart mason jar with whey and water to cover in a warm place 24–48 hours.

2. Drain and grind rice-lentil mixture in food processor for several minutes, adding water in small increments until you have a smooth, thick batter.

3. Allow to ferment again, in a covered bowl, a day or two. The batter should actually rise. Lentils ferment the best. The batter should have a sour odor.

4. Beat in eggs, melted fat, salt and baking powder.

5. Bake in your favorite waffle iron, following usual procedure or cook like pancakes on a griddle.

6. Refrigerate leftovers, then reheat in a toaster oven. Delicious with melted cheese and pickle for a triple-fermented treat.

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