

Fermentation Made Simple

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Sources of Information

- Sandor Ellix Katz - "Wild Fermentation"
- Sally Fallon – "Nourishing Traditions"
- Donna Gates- "The Body Ecology Diet"
- Rebecca Richey – Certified Colon Hydrotherapist & Nutrition Counseling
- Jen Allbritton – Nutrition expert and writer for Vitamin Cottage's "Health Hotline"

Definition of Fermentation

“n. – a living organism, as a yeast or bacterium, that brings about a transformation of a carbohydrate material to yield such products as alcohol, acids and carbon dioxide,”

➤ “v. – to arouse agitation or provoke change, to produce or bring to maturity”

Terms

- Organisms
- Microbes
- Micro-organisms
- Probiotics
- Microflora

Types of microbes involved

➤ Bacteria

➤ *Lactobacilli*

➤ Lactic Acid and CO₂

➤ Fungi

➤ Yeast (i.e. *Sacchromyces*)

➤ Alcohol and CO₂

➤ Molds (i.e. *Aspergillus*)

➤ Mushrooms (i.e. Kombucha)

Benefits of Fermentation

- Culinary Enhancement
 - Preservation without degradation of nutrients
 - Enhances flavor
 - Predigestion
 - Eliminates food toxins
 - Live cultures (populating the gut with beneficial flora)

Benefits of Fermentation

- Improved Biological Processes
 - Enzymes (digestive and metabolic)
 - Increase vitamin and mineral content & uptake (improves the passage of nutrients to the blood stream)
 - Free radical scavenger
 - Provide choline and acetylcholine

Benefits of Fermentation

Health Advantages

- Control cravings
- Increase energy
- Alkalinize the body
- Stimulate metabolism
- Decrease fat deposition
- Alleviates morning sickness
- Slow the heart rate
- Promotes calmness and sleep
- Normalize stomach acidity
- Protect stomach and intestinal lining
- Eliminate constipation

Where are lactobacilli found?

- Milk
- Skins of raw cabbage
- Living soil
- Healthy plants

Controversies

- Salt versus no salt (biodiversity)
- Water
- Air
- Light
- Starter versus grains
- Metal, plastic

Types of fermentation

- Aerobic (vinegar from alcohol)
 - With oxygen
- Anaerobic (lacto-fermentation)
 - Without oxygen

Supplies Needed

- Fresh Organic Food
- Filtered water
- A way to heat water (for sterilization)
- Sea Salt and/or starter culture
- Container and secondary containment
- Other items depending on recipe
(weight, strainer, screw driver, rubber mallet, hatchet)

Things we have learned

- Leave at least 1" head space for expansion
- Place ferments in secondary containers
- Many different ways, recipes and methods to ferment
- If you don't like the taste of one fermented kraut or cultured veggie, try another combination and/or try with other foods

Products

- Fermented Dairy Products
- Fermented Soy products
- Sourdough Bread
- Chocolate
- Vinegar (bases of condiments)
- Cured meats
- Beverages
- Condiments
- Fermented Vegetables

Lacto-Fermented Beverages

- Kombucha
- Coconut Kefir
- Beet Kvass
- Cream Soda
- Ginger Ale

Condiments

- Fish Sauce
 - The mother of all condiments
- Ketchup
 - From ke-tsiap, kechap & ketjap
- Mayonnaise
 - Can be fermented by using whey
 - Will keep several months with whey
 - Will keep about 2 weeks w/o whey

Sweet Pepper Ketchup

- Sauté in pan until soft:
 - 2 Tbsp Virgin Coconut oil
 - ½ cup chopped Red Pepper
 - ½ cup chopped Orange or Yellow Pepper
 - 1 cup chopped Leeks or Yellow Onions
 - ¼ cup chopped Green Onion
 - ¾ cup finely chopped Celery
 - 4 to 6 finely chopped garlic cloves
 - Pour this into food processor and process into a paste. Let this cool while you mix the following ingredients in a bowl:

Sweet Pepper Ketchup Cont.

- 20 oz. Organic Tomato Paste
- 8 oz Organic Tomato Sauce
- ¼ cup Maple Syrup
- ¼ tsp black pepper
- ¼ tsp curry or cayenne pepper
- 1 tsp sea salt
- ¼ cup homemade whey
- 1 tbsp Bragg Apple Cider Vinegar
- Add to this mixture the paste made above and pack into a sterilized quart jar. Leave 1" headspace at top. Leave out on counter for 2 days then store in refrigerator. Enjoy!

Coconut Mayonnaise

- Put the following into food processor:
- 1 whole egg
- 2 egg yolks
- 1 Tbsp mustard (Dijon is good)
- 1 Tbsp lemon juice
- ½ tsp sea salt
- ¼ tsp pepper
- 1 Tbsp whey (optional)
- Process until well blended about 30 seconds.

Coconut Mayonnaise Cont.

- With the processor running start adding your oils very slowly, start out with drops and work up to about a 1/16" stream. For the above amounts you want to use 1 cup of oil. I melt 1/2 cup Virgin Coconut Oil and combine with 1/2 cup of Virgin Olive Oil. This is a great combination. Transfer to a sterilized jar and leave out at room temperature for 7 hours before refrigerating. Enjoy!

Making Sauerkraut

- From Sandor Katz
- 1. Chop or grate cabbage, finely or coarsely, with or without hearts, however you like it. I love to mix green and red cabbage to end up with bright pink kraut. Place cabbage in a large bowl as you chop it.
- 2. Sprinkle salt on the cabbage as you go.
- 3. Add other vegetables like carrots.

Sauerkraut continued

4. Mix ingredients together and pack into crock.
5. Cover kraut with a plate or some other lid that fits snugly inside the crock.
6. Press down on the weight to add pressure to the cabbage and force water out of it.

Sauerkraut continued

7. Leave the crock to ferment.
8. Check the kraut every day or two.
9. Enjoy. I generally scoop out a bowl or jarful at a time and keep it in the fridge.
10. Develop a rhythm. I try to start a new batch before the previous batch runs out.

Cultured Vegetables

- From Donna Gates – Body Ecology Diet using Culture Starter packet
- Ingredients:
 - 1 head green cabbage, shredded in a food processor
 - 1 head red cabbage
 - 2 small yellow or Vidalia onions, chopped
 - 5 green onions, chopped
 - 4 carrots
 - 1 green apple (Granny Smith)
 - 1 large Red Pepper
 - 1 large Yellow Pepper
 - 4 stalks celery
 - 2 to 3 garlic cloves (optional)

Cultured Vegetables cont.

- Dissolve a package of Body Ecology Veggie Starter Culture in ¼ cup warm (90 degrees F) filtered water.
- Add Body Ecology's Eco Bloom to feed the starter if desired. You might also use a ½ tsp of Rapadura sugar or a bit of honey.
- Let this starter mixture sit for approx. 20 minutes or longer while the *L. Plantarum* and other bacteria wake up and begin enjoying the sugar.
- Add this starter culture to the brine in step 3 below.

Cultured Vegetables cont.

1. Combine all veggies, seeds, and herbs in a very large bowl.
2. Remove approx ½ of the above mixture and put into a blender.
3. Add enough filtered water to blender to create a “brine” the consistency of thick juice.
4. Pack mixture down into as many pint or quart sized glass jars as necessary to hold all the mixture.

Cultured Vegetables cont.

5. Fill container almost full, but leave about 2 inches of room at the top for veggies to expand.
6. Roll up several outer cabbage leaves into a tight "log" and place them on top to fill the remaining 2-inch space. Screw lid on very tightly.
7. Let veggies sit at approx 70 degrees F or room temperature for at least a week. Two weeks may be even better. Refrigerate to slow down fermentation.

Web Sites and Sources

- www.westonaprice.org
- www.nourishingconnections.org
- www.gemcultures.com
 - Milk Kefir Grains
 - Kombucha Mushrooms
- www.bodyecologydiet.com
 - Kefir and Culture Starter Packets
- Water Kefir Grains contact:
 - Marilyn Jardembski, (419) 237-3095
- Dom's Kefir In Site
 - [//users.charito.net.au/~dna/kefirpage.htm](http://users.charito.net.au/~dna/kefirpage.htm)

Other Resources

- Traditional Foods Preparation Workshop Video By Maureen Diaz
 - Proper Preparation of Nuts & Grains
 - Cultured Dairy Products
 - Condiments
 - Bone Broth
 - Lacto Fermented Vegetables
 - Suggested Reading
 - Available through Weston A Price Foundation

Other Resources

- Making Pickles, Vinegar and Other Condiments by Sandor Katz
 - CD set of 2
 - Great Resource for Sauerkraut, and other condiments such as:
 - Miso, Tempe and other fancy condiments
 - Available from Weston A Price Foundation

Other Resources

- Cook Your Way to Wellness DVD
by Maria Atwood
 - Kefir & Whey
 - Fermented Vegetables
 - Kombucha
 - Bone Broth-Butter-Grains-Nuts
 - Available from Maria Atwood C.N.
 - PO Box 460175
 - Aurora, CO 80046

Recommended Books

- Nourishing Traditions by Sally Fallon
- Wild Fermentation by Sandor Katz
- Eat Fat, Lose Fat by Dr. Mary Enig & Sally Fallon
- The Body Ecology Diet by Donna Gates
- Healing with Whole Foods by Paul Pitchford

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