Taking the Fear out of Fermentation
The Many Benefits of Fermented Foods

- Food Preservation - Increases Storage Time
- Easy Vegetables Ready to Serve Anytime
- Improves Digestibility
- Reduces Goitrogenic Effects of Cruciferous Vegetables (www.westonaprice.org/basics/bearers-of-the-cross)
- Increases Nutrients, Vitamins & Enzymes
- Adds Friendly Flora to the Intestinal Tract (Probiotics)
- Taste!
Safety of Homemade Ferments

- Botulism was an obscure disease until the advent of canning.
- *C. botulinum* spore is extraordinarily heat tolerant.
- *C. botulinum* is inhibited by acid environment.
- Lactic acid inhibits other bacteria & creates an acid environment.
- Fermentation has been used to purify water.
- Fermented foods may be *safer* than raw foods.
Safety of Homemade Ferments

- “There has never been a documented case of foodborne illness from fermented vegetables. Risky is not a word I would use to describe vegetable fermentation.”
- Fred Breidt (USDA vegetable fermentation specialist)
Reasons to Make Your Own

Most commercial brands are:

- NOT fermented
- Pasteurized to kill microorganisms (also destroys enzymes)
- Good brands more expensive than homemade

- Some good brands exist. Look for words such as: “Live”, “Contains live cultures”, “Unpasteurized” and Lacto-fermented”. 
Salt

Benefits to ferment:
- Creates a selective environment to encourage the growth of certain microorganisms.
- Prevents spoilage, allows beneficial bacteria to thrive.
- Pulls juices out of vegetables by osmosis.

Benefits to health:
- Adds Flavor.
- Adds Minerals (when unrefined salt is used).
- Needed for digestion.
Salt

- 2-3% salt by weight suggested
- (~1.5-2 tsp. salt per lb. veggies)
- Start at lower level and adjust to taste.
- Harder to remove excess salt - add more veggies.
- Reduced salt diets has not been shown to be beneficial.
- See articles on westonaprice.org
- Links to salt articles: eugenewestonaprice.org/salt
- There are also some low or no salt recipes available.
Starter Culture

- No Added Starter: “Wild Fermentation”
  This is traditional for raw vegetable ferments.
  Uses naturally occurring bacteria - nothing added
- Whey (liquid strained from yogurt or kefir)
- Commercial Starter (see Shopping Guide for sources)
- Probiotic Supplement
- Liquid from previous batch of ferment
- Kefir grains  (Chose ONE)
Whey

- **Purpose**
  - Provides probiotic starter culture (inoculant)

- **Type:**
  - Liquid drained from good quality whole milk unflavored yogurt, kefir or cultured milk.

- **Do not use** (they do not work):
  - Whey from cheese making
  - Dry powdered whey
Making Whey

Yogurt, Kefir, or Raw Cultured Milk.

- **Best** - Make from grass-fed raw milk.
- **Good** - Quality commercial yogurt.
- **Look for few ingredients on the label:**
  - Whole milk, cream, & starter cultures.
  - Avoid: gums, stabilizers, thickeners & dry powdered milk.

Consult Weston A. Price Foundation *Shopping Guide* for brands.
Basic Fermented Veggies

Ingredients - Yield: 2 quarts
- ~3 lbs. vegetables
- 1 1/2 to 2 Tbsp sea salt
- 4 Tbsp whey (optional)
- 1-5 Tbsp herbs, spices or flavorful foods

Conversions:
- 1 Tbsp = 3 tsp. = ~15 ml
- 4 Tbsp = 1/4 cup = ~60 ml
- 2 quarts = 1/2 gallon = ~2000 ml
Basic Method

▲ Chop
  ▲ Flavor

▲ Salt
  ▲ Mix
  ▲ Let sit
  ▲ Pound

▲ Pack
  ▲ Check Headspace
  ▲ Weight
  ▲ Label & Date

▲ Wait
  ▲ Burp (if needed)
  ▲ Serve
Flavor

Herbs, Spices & Flavorful Foods include:

- Garlic, Onion, Ginger, Horseradish, Dill, Celery seeds, Caraway seeds, Mustard seeds, Cumin, Coriander seeds, Juniper berries, Tarragon, Lavender, Small dried fishes, Dried shrimp, Seaweed, Hot Peppers (fresh or dried), Turmeric, Fenugreek, and many others...

- (Many traditional spices are also mold inhibitors)
Fermentation Weights

- No weights - Simply apply lid
- Glass fermentation weights
- Plastic lid cut to fit jar
- Marbles in cloth bag
- Ceramic weights
- Iron nails in a plastic baggy?
- Boiled river rocks
- Small jar filled with water
Air Lock

เช่น ไม่ - ปิดฝาและทิ้งห้วงความอากาศ
เช่น อิริยาบถ (จาก homebrew หรือ winemaking store).
เช่น Commercial pickle or sauerkraut air locks.
เช่น Olive oil layer.
เช่น Wire bale jar.
Headspace

- Leave at least 1” headspace.
- Better to keep veggies below “shoulders”.
- Air can compress (more than liquids).
Traditional Sauerkraut

Ingredients  - Yield: 2 quarts

- 1 medium cabbage (~3 lbs)
- 1 Tbsp. caraway seeds
- 1 1/2 - 2 Tbsp. sea salt
- 4 Tbsp. whey (optional)
Pink PowerKraut

Ingredients - Yield: 2 quarts

- 1 medium head green cabbage (~2 lbs.)
- 8 carrots – grated
- 8 ribs celery – sliced
- 1/2 medium beet – grated
- 2-4 cloves garlic – diced
- 1 Tbsp. fresh ginger - grated
- 4 Tbsp. whey (optional)
- 2 Tbsp. Sea Salt
- 2 Tbsp. Dulse
- 2 Tbsp. Arame
- 2 Tbsp. small dried anchovies
Vegetables in Brine

Ingredients - Yield: 2 quarts

- ~2 lbs vegetables (whole or coarsely chopped)
- 1-2 Tbsp. salt
- 1-2 Tbsp herbs or spices
- 4 Tbsp. whey
- filtered water

Vegetables can be raw or lightly cooked.
Dilly Beans

Ingredients - Yield: 1 quarts

- ~1 lbs Fresh Green Beans
- 1/2-1 Tbsp. salt
- 1 stem of fresh dill or 2 tsp. dried dill
- 1-3 cloves garlic
- 1/2 carrot (optional)
- 2 Tbsp. whey
- filtered water

Blanch beans in boiling water for 2-5 minutes. Rinse in cold water to cool.
Water

- Best - Clean Well Water or Spring Water
- Good - Filtered Water
- Avoid - Tap water with chlorine

- Chlorine is put into water to kill microorganisms.
- If you must use tap water, remove the chlorine by filtering, boiling in open pot, or leaving exposed to air for a few days.
Examples of Vegetables Pickled in Brine

- Dill Pickles
- Bread & Butter Pickles
- Pearl Onions
- Dilly Beans
- Garlic Carrots
- Whole Cabbage
- Turnips
- Cauliflower
- Green Tomatoes
- Watermelon Rind
- Olives
- Beets
- Garlic
- Radish
- Okra
- Peppers

... and endless possible combinations
Pickled Cauliflower

Ingredients  - Yield: 2 quarts

- 1 small head cabbage
- 1 carrot
- 1 Anaheim pepper
- 1-3 cloves garlic
- 1-2 Tbsp. salt
- 4 Tbsp. whey
- filtered water
Ginger Carrots

Ingredients  - Yield: 2 quarts

- Carrots ~ 2 lbs.
- 1 TBS fresh ginger - grated
- 1-2 Tbsp. salt
- 4 Tbsp. whey
- filtered water
Beet Kvass

Ingredients  - Yield: 2 quarts

- 3 medium or two large beets coarsely chopped
- 1 Tbsp Sea Salt
- 4 Tbsp whey
- Filtered water

Yield: 2 quarts

Nourishing Traditions, pg. 608
Quinoa Milk

Ingredients - Yield: 2 quarts
- ½ c. quinoa (raw, dry)
- 1 tsp. unrefined salt
- filtered water
- ¼ c whey

Serve with: raw honey, cinnamon & raw cream

Nourishing Traditions, pg. 593
Variation of Rice Milk: “Nursing Mothers Tonic”
Can also use other grains
Be Creative - Experiment!

- Use your own vegetable combinations.
- Make notes of your recipes.
- Label every jar.
  (you will forget what is in there!)
Improvise

Combine vegetables such as:

- Cabbage, turnip, carrot, beet, radish, onion, broccoli, cauliflower, bok choy, Brussels sprout, celery, fennel, leek, peas, green beans, peppers, chard, kale, spinach, and many others...

Cabbage and root crops make a good base to mix with other veggies.
Trouble Shooting:

- White surface film? Oxidized surface layer?
- Mold or yeast layer? - Scrape it off.
- If the ferments look, smell and taste good underneath, it is probably fine to consume.
- If they start to taste bad, compost them and start over.
- Trust your senses.
If you have problems, try these tips

- Make sure vegetables are fresh & organic.
- Make sure you are not using too much salt (2-3% by weight)
- Keep vegetables submerged under juices.
- Make sure you have a vibrant inoculant.
- Make sure your water doesn’t have chemicals.
- Use an air lock.
- Leave enough headspace.
- Get together with other experienced fermenters.
Enjoy Your Ferments!

If you are new to live fermented foods:

- Start slowly.
- Add a small amount each day.
- They contain powerful probiotics.
- If you have digestive upset, back off for a while.
- Trust your body!
Learn More

- Read books.
- Attend a class or workshop.
  - The Eugene Chapter holds classes!
- Get together with friends.
- Share your ferments.
- Teach others!
Recommended Reading:

For Recipes and Inspiration:

- *Nourishing Traditions* by Sally Fallon & Mary Enig, PhD
- *Eat Fat, Lose Fat* by Sally Fallon & Mary Enig, PhD
- *The Idiots Guide to Fermenting Foods* by Wardeh Harmon (Local Oregon author!)
- *Wild Fermentation* by Sandor Ellix Katz
- *The Art of Fermentation* by Sandor Ellix Katz
- *Wise Traditions Journal*
- Thumbs Up Book Reviews - www.westonaprice.org
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