The EssentiaList

August 6, 2011

Bigfork's Essential Stuff Newsletter -- Bringing People Together
A Publication of the Essential Stuff Project, Bigfork, Montana

Lacto-Fermentation Recipes:
Seeds, Grains, Dairy & Kombucha

Table of Contents

See also: The EssentiaList: Lacto-Fermentation of Fruits & Vegetables

Seed Ferments

Pepita (Pumpkin) Seed Milk and Kefir

adapted from 'Wild Fermentation' (2)

Any edible seeds or nuts can be used, but peptias have an especially nice flavor.

1 cup pepita seeds
1 tsp non-GMO lecithin (optional as a binder)
filtered water
1 Tbsp kefir grains per quart of milk

1. Grind seeds in a blender into a fine meal. Add ½ cup of the water and blend into a paste. Add 3 cups water and all of the lecithin (if using), and blend some more.
2. Strain through cheesecloth, pressing to squeeze moisture from the seed solids (reserve solids to add to breads).
3. Add more water, a little at a time and stir, until desired consistency is reached. Store in fridge and stir before use.

To make kefir from pepita milk:

1. Add kefir grains. Leave together in a jar at room temperature for 1-2 days. Then strain out the curds. (See The EssentiaList: Using Kefir Grains for more about using kefir grains.
2. OR you can use powdered kefir culture as described in the Dairy Ferments section.

Grain Ferments & Sourdough

Rejuvelac

adapted from 'Nourishing Traditions' (3)

Rejuvelac is a home-brewed fermented beverage that helps to replenish intestinal microflora and rebuild digestion. A refreshing energy booster, detoxifier and alkalizer, it is also an excellent source of vitamins, minerals, enzymes, probiotics, and antioxidants. It is a yellowish, cloudy, tart (but not too sour) and slightly fizzy drink.

2 cups Organic soft sprint wheat berries Filtered water

2-quart wide-mouthed glass jar

1. **Rinse** wheat berries in water to remove dust and debris.
2. **Sprout**: Soak grain in filtered water overnight at room temperature for 8-10 hours, covered with muslin, cheesecloth or a sprouting screen; drain through the cover, rinse and drain again. Place jar at an angle to drain, allowing the wheat to sprout for 1-3 days or until the roots are ¼ inch long. Rinse 2-3 times per day.
3. **Make Rejuvelac**: Fill the jar (of sprouts) with pure water and ferment the culture for 2 - 4 days or until it is slightly milky with a layer of froth on the surface. 70 degree temp is ideal for this.
4. **Enjoy**: Decant the liquid (reserve the sprouts) and start consuming 2 - 8 cups per day, spooning off any white foam that may form on the top. Refrigerate the liquid that will not be consumed today (for up to 1 week).
5. **Reuse**: These same wheat berries should be used a second time. this time, 4 cups pure water and 18-24 hours produce a vigorous batch. Then discard the spent grain (compost or throw to birds), or try making a 3rd batch by filling again and soaking another 24-hours..

Notes:

- Rejuvelac should be acidic (less than 3.9 pH). Periodically observe, smell and taste the culture to make sure it has not gone bad.
- All bacteria and yeasts have an optimum incubation temperature. Refrigeration as well as high temperatures may encourage the growth of bad organisms. If your culture smells bad discard it, clean the jar and retry. In hot weather, a little lemon juice in the water at the start of fermentation may be beneficial.
- The sprouts made in step 2 in the instructions may be eaten as they are, pressed into Essene Bread or scattered into trays as the first step in growing Wheat Grass.

Other Fermented Grain Recipes

- The EssentiaList: 'Sourdough' Pie Crust (printable pdf file)
- The EssentiaList 'Sourdough' Oatmeal Porridge (printable pdf file)
- Using Soaked Flour in Recipes (printable pdf file)

Kvass

adapted from 'Nourishing Traditions' (3)

4-5 slices whole grain sourdough bread
¼ cup whey*
½ cup raisins
2 quarts filtered water
2 tsp unrefined sea salt
2 apples, peeled and quartered

1. Place bread in a warm oven until dried out. Place in large bowl.
2. Bring water to a boil and pour over bread. Let cool before adding salt and whey. Cover with a cloth and leave at room temperature for 2-3 days. Remove bread and strain into a 2-quart container. Add raisins and apples, cover tightly and store in refrigerator for about 1 month before drinking. Kvass is ready when the fruit floats - a sign that sufficient lactic acid has been produced.

* Whey is obtained by allowing yogurt, buttermilk or kefir to drain through a fine sieve, or from cheesemaking. It is rich in probiotics which jump start the fermentation process. If you don't have whey, use more salt.

Sourdough Starter

by Veronica Honthaas

1 - 2 cups freshly ground whole wheat flour; water

Place flour in a glass jar or quality ceramic container. Add enough water to make a muffin-like consistency. Cover with cloth secured with rubber band and place in room temperature location.

Each day take out about half of the batter and add some additional flour and water. Stir well. Continue this process for about 5 to 7 days. When the mixture gets nice and bubbly and smells slightly sour, it is ready.

Starter can be stored on the counter if you use it about twice a week. If you do not use it that often, it should be stored in the fridge.

Starter must always be covered with a cloth or be in a nice ceramic canister with a lid that will allow carbon dioxide to escape.

Feed your starter at least once a week. If you forget to feed it for a few weeks it may take a number of feedings to get it back in shape. When in doubt….FEED. The more you feed the better.

Remember: Starter must always be freshly feed about 6 to 12 hours before you need to use it.

Sourdough Starter, continued

Using Starter

3. The day before you need it for baking, take starter out of the fridge. Take half of it out and feed it with additional flour and water. Let it sit at room temperature and grow bubbly again.
4. Sometimes our starters get tired and need a few extra feedings to become really lively again. The more life in your starter, the better the bread. When in doubt, FEED IT!
5. If at any time your starter looks moldy or smells rotten, just throw it out and make a new starter from scratch. [Cat's note: the brownish liquid that forms at the top is called hooch, and is alcoholic. This is a normal product; either stir it into the starter when feeding, or pour it off.]

Final Notes

- Fresh ground whole wheat bread does not require store bought yeast.
- No kneading is required (just mix in the bowl with your hand).
- Bread consists of flour, water, starter and a tad of salt. It is simple, hearty, delicious and easier to digest than regular bread (gluten breaks down with fermentation).
- In addition to fresh bread, your sourdough starter will make the very best pancakes and muffins.

See also ESP printable pdf files:

- Gathering Summary: Sourdough, a Panel Presentation
- The EssentiaList: Sourdough (handout)
- The EssentiaList: Sourdough Recipes

or ESP articles:

- Alternative Sourdough Starters
- The Importance of Grinding Your Own Flour
- The Problem with Unfermented Grains

Dairy Ferments

Yogurt

From Jeanette Cheney

1 quart milk (skim milk, 2% or whole milk or goats milk, [raw milk], soy or nut milk)
dry culture (WEC sells Natren brand, Ygourmet is another brand available locally) or plain, unsweetened "live" yogurt (commercial or from a previous batch)

1. Heat milk to 180° F (scalding; just below boiling) for 5 minutes, then cool to 110° F. For soy milk, you may thicken with powdered agar (about 1 tsp per quart).
2. Dissolve 1 tsp dry culture (or a few tsp yogurt) in 1 Tbsp of warm milk, then add back to quart. Pour mixture into jar(s), screw on lids, and place in yogurt maker (or in a warm place where temperature is maintained at 106° - 110° F.
3. Leave jar(s) undisturbed for at least 8 hours, and do not let temperature fall below 106° F. Check for consistency after 8 hours (should be custard-like if using cow's milk and a little more liquid if using goat's milk). Process longer if necessary and check every hour.
4. Refrigerate immediately and wait until yogurt is cold to stir in any amendments such as fruit, extracts of lemon or orange, or a sweetener (stevia, maple syrup or other natural sweetener). NOTE: be sure to save some of the plain yogurt for starting your next batch. Yogurt lives for 6 - 7 days, but is too old to serve as a starter after just 5 days.

Success in yogurt-making depends on several things: clean equipment, a good culture, properly maintained temperatures, and milk that is free of antibiotics. Be sure that you have heated milk to a full 180° F before allowing it to cool to 110° F, and do not allow the mixture to cool below 106° F.

Cat's Notes:

1. All dairy milk must be heated to 180° F then cooled to 110° F, even raw milk, to keep if from separating before it can form yogurt.
2. Yogurt doesn't like to be crowded, so avoid temptation to add more than 1 tsp yogurt per quart milk (or 1 packet powdered culture per quart milk).
3. After mixing in the starter, disturb as little as possible, or the milk will separate.
4. My yogurt is usually ready in 6-7 hours; whey begins to separate after that. And it is still an active starter after 20 days! if kept in the fridge.
5. You can add other probiotics to the culture (but not an entire capsule), preferably *lactobaccillus* or *bifidus species*.

See also ESP printable pdf files:

- The EssentiaList: Making Yogurt at Home: a Photo Essay
- The EssentiaList: Yogurt & Kefir, from Powdered Culture

Kefir from Yogourmet Powdered Culture

from Jeanette Cheney

1 quart milk — Yogourmet Powdered Kefir culture

[NOTE: Yogourmet kefir is only good for one batch; you won't get a good result if you use part of a previous batch to make a new batch.]

1. Heat pasteurized milk to 180° F for 5 minutes, then cool to 74° F. [If using raw milk, just heat to 75 - 90° F]. Dissolve one packet of culture in a small amount of the cooled milk in a cup. Pour back into the quart and mix well.
2. Pour mixture into a clean bottle or jar, cover, and let stand at room temperature until curd forms (about 24 hours).
3. Refrigerate about 8 hours to stop the fermenting process. The mixture will continue to thicken in the fridge. Stir or shake to liquify and get rid of clumps. Keep stored in fridge. [Cat's note: if whey separates, give it a good shake before serving].

Kefir from Body Ecology or New England Cheesemaking Culture

by Catherine Haug

1 quart milk — Powdered Kefir culture

[NOTE: Body Ecology or New England Cheesemaking cultures can be used to make 7 or more batches of kefir from a previous batch (see sources).]

1. Heat pasteurized milk to 180° F (scalding; just below boiling) for 5 minutes, then cool to 74° F. If using raw milk, just heat to 74 - 90° F. Dissolve one packet of culture in a small amount of the cooled milk in a cup. Pour back into the quart and mix well. Follow above recipe beginning with step 2. Will be ready in 12 - 24 hours.
2. To make a new batch, stir ¼ - ½ cup kefir per quart of milk, into the warmed milk. Let sit at room temp for 12 - 24 hours. Refrigerate. Shake well before serving.

Kefir from Commercial Kefir

from Jeanette Cheney

1 quart milk — ½ cup plain Kefir

1. Stir ¼ - ½ cup kefir per quart of milk, into the warmed milk. Let sit at room temperature for 12 - 16 hours. Refrigerate. Shake well before serving.

Nut Milk Kefir

from Jeanette Cheney

1 quart nut milk or coconut milk — ½ cup plain Kefir

1. Add starter to nut milk in jar; shake jar to blend. Let sit at room temperature for 2 days (covered with a cloth to keep in dark). Transfer to refrigerator.

See also ESP printable pdf files:

- The EssentiaList: Yogurt & Kefir, from Powdered Culture
- The EssentiaList: Using Kefir Grains

Kombucha

(This information is from Jeanette Cheney)

Kombucha, also known as the Manchurian or Kargasok mushroom, is not a mushroom but rather a mixture of bacteria (including *Acetobacter xylinum*, *Acetobacter ketogenum* and *Pichia fermentans*) and yeasts (usually of the genera *Saccharomyces*, *Brettanomyces* and *Zygosaccharomyces)*.

Kombucha is prepared by incubating the "mushroom" in sugared black tea. The resultant tea is mildly effervescent and has a cider-like acid taste. The "mushroom" can be cultured from commercially available Kombucha or acquired from someone who already has the mixture in process.

It is revered by many cultures for hundreds, pehaps thousands of years, to promote well-being, and is purported to provide the following benefits:

- Acts as a gentle laxative, helping avoid constipation.
- Aids in the relief of arthritis.
- Cleanses the colon and gall bladder.
- Aids in healthy digestion
- Relieves colitis and stomach cramps.
- Returns gray hair to it's natural color.
- Helps stop non-infectious diarrhea.
- Relieves bronchitis and asthma.
- Clears up Candida yeast infections.
- Regulates the appetite and reduces fat.
- Aids with stress and insomnia.
- Improves eyesight, cataracts & floaters.
- Relieves migraines & other headaches.
- Puts Lupus into remission.
- Helps reduces the alcoholic's craving for alcohol.
- Eliminates menopausal hot flashes.
- Clears acne, psoriasis and other skin problems.
- Thickens hair and strengthens fingernails.
- Enhances the sense of smell.
- Vitalizes the physical body and adds energy-including sexual energy!

Kombucha "mother" can be purchased; see Sources.

Kombucha Tea

adapted from Jeanette Cheney and 'Nourishing Traditions' (3)

3-4 quarts filtered or distilled water	4 - 5 bags (or ¼ cup loose) Organic black tea
1 cup sugar	1 - 2 cups previous batch Kombucha
1 Kombucha 'mushroom'('mother')	4-quart glass container jar, bottle, or bowl

1. Boil water to sanitize (If using distilled water, boil only 2 cups for making the tea and use room-temp distilled water to cool off). Add sugar; simmer until dissolved.
2. Remove from heat; add Organic black tea (should be black to control bacteria, not herbal or green tea). Let steep until it is less than 100 degrees. Remove tea bags.
3. Strain through clean cloth or fine mesh strainer into a sanitized 1-gallon wide mouth glass jar. You may reserve up to 1/5 of the black tea to place in another glass container for making 'mother starters' for friends.
4. Add desired amount of previous batch Kombucha and pure water until the liquid level is to the top of the widest part of the jar (before it bends to narrow), or 1" below top of bowl. Float your freshly rinsed "mushroom" on top (shiny side up).
5. Cover with clean cloth secured by rubber band; store in warm, dark place for 7 - 21 days. The longer the time, the more bubbles and tartness. It is ready to drink when the flavor suits your taste. The 'mushroom' will have grown a second spongy pancake which can be used to make other batches or given away to friends.
6. Pour through strainer into glass bottles and store in fridge or cool place. Save some Kombucha tea as a starter for the new batch (step 4).

NOTES (*from Nourishing Traditions*):

- Do not wash kombucha jars in the dishwasher.
- Store fresh 'mushrooms' in fridge in a glass or stainless steel container - never plastic. A kombucha 'mushroom' can be used dozens of times. If it begins to turn black, or if the resulting kombucha doesn't sour properly it's a sign the culture has become contaminated (best to compost and order a new, clean one).

SPECIAL NOTES *(from Jeanette Cheney)*

- All preparation of ferments should be under **very strict sterile conditions. Keep everything very clean!!** Use disposable paper towels, not cloth towel.
- If the "mother" does not float, it may be too heavy. Every week your mixture will make a new, thin "mother" or add a layer to the old one.
- This is a live culture so it must never be raised over 105 degrees.
- You can store the finished Tea in the fridge or keep at room temp. It will continue to get stronger if kept at room temperature.
- Kombucha tea should taste good . . . fresh and crisp like cider. If it does not taste good do not drink it. It should be bubbly!
- Check out this website for more information: Kombucha Unveiled

Peach Flavored Kombucha Tea

from Jeanette Cheney

Basic Recipe (above) plus: 2 peach tea bags

Follow basic recipe (above) to prepare your tea. Then add 2 peach tea bags in addition to the others. Celestial Tea makes and excelent Herbal Peach Tea. Steep the tea for 15 minutes and continue following the normal preparation of your tea. This recipe works when using both black as well as green tea.

Sources & References

Sources

Kombucha "Mother" [NOTE: these sources have not been verified to be current]:

- Laurel Farms, PO Box 7475, Studio City, CA 91614; (310) 289-4372
- AF Distribution, PO Box 19037, Enico, CA 91416; (818) 708-2299
- Kombucha America, PO Box 1705, Point Roberts, WA 98281-1705; (360) 603 4075; Fax (815) 550-2799

Kefir Starter (reuseable)

- Body Ecology (866-533-4748 or www.kefir.net)
- Wilderness Family Naturals (www.wildernessfamilynaturals.com/kefir_culture.htm)
- New England Cheesemaking Supply (www.cheesemaking.com/store/p/146-Kefir-2-packets.html).

Kefir Starter (Yogourmet, not reuseable)

- Wellness Education Center (WEC), 103 Ponderosa Ln, Kalispell, MT; 755-8423
- Withey's, 1231 S Main, Kalispell, MT; 755-5260
- Mountain Valley Foods, 25 Commons Way, Kalispell, MT; 756-1422

References

1. Veronica Honthaas
2. *"Wild Fermentation"* by Sandor Elix Katz
3. *"Nourishing Traditions"* by Sally Fallon & Mary G. Enig, PhD.
4. Jeanette Cheney
5. Kombucha Unveiled (users.bestweb.net/~om/~kombu/FAQ/part01h.html)

Related ESP printable pdf files

- The EssentiaList: Lacto-Fermentation of Fruits & Vegetables
- The EssentiaList: Pickling & Lacto-Fermentation Intro, Sources, & Recipes (essentialstuff.org/wp-content/uploads/2009/02/picklingsources_esl.pdf)
- The EssentiaList: 'Sourdough' Pie Crust (essentialstuff.org/wp-content/uploads/2011/05/PieCrust-Ferment_EsL.pdf)
- The EssentiaList 'Sourdough' Oatmeal Porridge (essentialstuff.org/wp-content/uploads/2011/06/OatmealPorridge-Ferment_EsL.pdf)
- Using Soaked Flour in Recipes (essentialstuff.org/wp-content/uploads/2011/05/soakFlour-QBconv_cmprs.pdf)
- Gathering Summary: Sourdough, a Panel Presentation (essentialstuff.org/wp-content/uploads/2011/05/Sourdough_Panel_051811.pdf)
- The EssentiaList: Sourdough (handout) (essentialstuff.org/wp-content/uploads/2011/04/Sourdough_EsL.pdf)
- The EssentiaList: Sourdough Recipes (essentialstuff.org/wp-content/uploads/2011/05/Sourdough-Recipes_EsL.pdf)
- The EssentiaList: Making Yogurt at Home: a Photo Essay (essentialstuff.org/wp-content/uploads/2011/07/Yogurt-photoEssay_EsL.pdf)
- The EssentiaList: Yogurt & Kefir, from Powdered Culture (essentialstuff.org/wp-content/uploads/2009/02/yogurt-kefir_esl.pdf)
- The EssentiaList: Using Kefir Grains (essentialstuff.org/wp-content/uploads/2009/02/kefir-advanced_esl.pdf)

Related ESP articles

- Alternative Sourdough Starters (essentialstuff.org/index.php/2011/04/17/Cat/alternative-sourdough-starters/)
- The Importance of Grinding Your Own Flour (essentialstuff.org/index.php/2011/05/22/Cat/the-importance-of-grinding-your-own-flour)
- The Problem with Unfermented Grains (essentialstuff.org/index.php/2011/05/22/Cat/the-problem-with-unfermented-grains/)