

Gathering Summary: Sourdough; A Panel Presentation , May 18, 2011

Summary and photo by Catherine Haug

(photo of Cat's first mixed whole grain sourdough loaf, right)



Introduction

Panel members: Ronny Honthaas, Kathie Lapcevic, and Fran Wade each have many years experience using sourdough, not only for bread but also for pancakes and sweet treats. All contributed recipes using sourdough (see Handouts, below); Ronny brought a sample loaf of sourdough bread to taste. All brought extra starter for attendees to take home.

Handouts

[The EssentialList: Sourdough, an overview](#) (1)

[The EssentialList: Sourdough recipes](#) (contributed by our panel) (2)

Related posts on The EssentialList

[Alternative Sourdough Starters](#) (gluten free, other cultures) (3)

[‘Sourdough’ Pie Crust](#) (a photo-essay) (4)

[The Importance of Grinding your own Flour](#) (5)

[The Problem of Unfermented Grains](#) (6)

History and Health Benefits of Sourdough

Wheat was first domesticated 4,000 - 6,000 years ago in the Fertile Crescent, where humans discovered that fermenting the grain could make a beverage (beer) and leavened bread. Ronny contrasted this with the history of rice and millet that were domesticated in Asia; these grains were boiled to make them edible.

According to biblical writings, “bread [not wheat] is the staff of life,” inferring that these ancient peoples recognized that wheat must be fermented and made into bread, to sustain life. But somewhere along the way, modern humans forgot and are only now rediscovering this important dietary truth.

In the 1880s, commercial yeast was developed, to make bread without maintaining a sourdough starter, but was not widely used until the mid 1900s. In this same time frame, white flour (stripped of the bran and germ in whole grain) was developed, which had a longer shelf life than whole grain flour, and produced lighter baked goods. But these discoveries came with a price that we pay with our health and well being.

To illustrate the importance of fermentation for the healthfulness of whole grains, Ronny talked about one of grain’s anti-nutrients, phytic acid (or phytates in salt form)

Phytates

[Phytic acid](#) is a storage form of phosphorus used by many plants; it is found in the seed because of its ability to bind minerals, keeping them from activating enzymes in the seed until the time is right for germination. Unfortunately, phytates also bind (chelate) important minerals (such as calcium, magnesium, zinc and iron) in our digestive tract, blocking absorption. Phytates in unfermented grain play a significant role in osteoporosis.

Long-cooking whole grains (as in porridge cooked for hours) will break down many of the phytates, but fermentation of the whole grain is a far more effective method, because the microbes provide the phytase enzyme to break down the phytates.

Ronny noted that commercial yeast works too fast and thus does not have enough time to break down the phytates. Sourdough, on the other hand, works slowly and is far more effective against this anti-nutrient.

Other anti-nutrients in grain

Phytic acid is not the only anti-nutrient in whole grains that are broken down by fermentation of the grain. For example:

- Gluten - this complex protein provides structure for breads and other baked goods, but is problematic for those with gluten intolerance or Celiac disorder.
- Lectins - This was not discussed but only mentioned. One of the proteins in gluten, alpha-gliadean, is a lectin. See [The Problem of Unfermented Grains](#) (6) for more.

Sourdough Starter

The first starter was just flour and water, plus natural lacto-fermenting bacteria and yeast from the air, and this has worked for centuries, long before commercial yeast was developed. You do not need to add commercial yeast to your sourdough; in fact, such addition weakens your starter.

Sourdough needs to rise slowly - hours - in order to build up the strength of the dough so that it doesn't fall later.

Q: Do you use white flour for starter?

A: You can use that (Fran's starter is made from unbleached white flour), but whole grain is better (more nutritious) - especially if it is freshly ground to avoid rancidity. If you can't grind your own fresh flour, it's better to use Organic unbleached white flour because it doesn't get rancid. [See [The Importance of Grinding your own Flour](#) (and how to ease into it if you can't afford a grinder) for more (5)].

Grinders: Ronny showed us her grinders: [Nutrimill](#) (10) electric grinder (hammermill type), and [Country Living](#) (10) manual grinder that can be mechanized. She noted that Magic Mill makes a good electric grinder, and you can also get grinder attachments for good quality stand mixers such as Kitchen Aid and Braun.

Q: Where can you get fresh-ground flour?

A: Health food stores used to have mills for customers' use in grinding grains. You can still get whole grain flours from natural and health food stores, as well as Azure foods, but you don't know how fresh ground it is. Truly, you are better off buying the whole grain and grinding your own. Ronny has 300 lbs grain stored in her basement.

If you can't afford a new mill, check the classifieds or Mountain Trader for used mills, or go in with your neighbors to purchase a mill. [See [The Importance of Grinding your own Flour](#) (and how to ease into it if you can't afford a grinder) for more (5).]

Discussion: A CSA on the east side sells grain and delivers here (they were at the Economy of Food and Farm event in March).

[Prairie Heritage Farm](#) (11) in Conrad MT offers a Grain and Seed CSA program. Check out their CSA website: [Prairie Heritage Farm CSA Programs](#).

[Wheat Montana](#) (12) also sells whole (not ground) grains as well as flour; some are Organic; available at the local Wheat Montana Deli in Kalispell.

[Montana Milling](#) (13) in Great Falls also sells grains; some are Organic; you may have to arrange for shipping.

Q: Can you use other flours (gluten-free)?

A: Ronny addressed gluten intolerance, and how using sourdough can help. Your problem with gluten may be because it has not been fermented. She suggests going gluten-free for 1 - 2 years, then slowly introduce fermented grains.

Other health issues that may be helped by using sourdough:

- Her husband's psoriasis was persistent; herbs would help but not fix it. So she introduced sourdough into their diet and eliminated non-fermented grains, and his psoriasis went away (90%).
- Sourdough has a lower glycemic index than non-fermented grain; those with insulin and/or blood sugar issues may see improvement by introducing sourdough.

Using non-gluten grains will ferment, but they won't bubble, so may not work as well. See Cat's post on [Alternative Sourdough Starters](#) (3) for more.

Discussion: The way that grain is milled affects vitamin content.

Q: Do you need a certain percentage of protein for sourdough to work?

A: Ronny responded, "No. Betty Crocker is dead." Ronny's 'rules' for successful, healthful sourdough:

1. No chlorinated water
2. Use Organic - no pesticides, no GMOs, etc.
3. Use Fresh ground"

You can use hard wheat (higher protein) or soft wheat (lower protein). You can use other grains like rye, spelt, oat, Kamut, emmer, etc. .

How to make starter

Kathie led this discussion. Combiner in a glass or ceramic jar:

- 1 cup non-chlorinated water
- 1 cup fresh-ground whole wheat

Mix it up - it will be a soft slurry - then set on counter covered with good quality cheese-cloth or butter muslin, held in place with a rubber band.

Let it sit for a couple days until it gets bubbly. Then feed it with 1 cup water and 1 cup freshly ground grain. The more you feed it, the more sour it gets.

The first time you use it, it won't lift bread, so make something like chepatis or pizza crust (see [The EssentialList: Sourdough recipes](#) (2)). It takes about 5 - 7 days for a new starter to make bread (with regular feeding every 2 - 3 days).

Keep it in a glass or ceramic container, never metal (but you can bake in metal).

In between baking sessions, keep starter in the fridge if you are not using it daily. The night before you want to use it, take it out to feed, enough to double the amount. Leave it on the counter to let it work overnight.

When you use it, remember to leave about 1 cup of starter in the container for future starter, and to keep it going.

When in doubt, feed it. If it gets too dry, use more water. It should have a pudding-like consistency.

Check out [Mother Earth News](#); search for [sourdough](#) (14); lots of recipes and tips. See also [Baking with Sourdough E-Handbook](#), by Sara Pitzer (downloadable pdf for a fee).

Q: Why doesn't local sourdough taste like San Francisco Sourdough?

A: The older the starter, the more sour it gets. Local microbes affect taste; if you bring some SF Sourdough starter to Bigfork, with time, it's flavor will change to be more like local sourdough.

Q: Do you need a sourdough babysitter if you go away?

A: No. Put your starter in the fridge or the freezer while you are away.

Q: How long can you keep it in the fridge without feeding?

A: A long time. It may develop black stuff on top; just scrape it off.

Q: What can you do with the cast-off, if you're not ready to bake something?

A: You can make chapatis, which are quick and delicious. Or put it on your compost, or in your septic system. Or give it away to someone who wants starter.

Q: What is a cast-off?

A: When you start to get too much starter, from frequent feeding without using it, you remove some of it to return it to a reasonable size. What you remove is a cast-off. Also, the bit that you remove to use in a recipe can be called a cast-off.

Forming Bread: Ronny's Demonstration

Start with about 4 cups of flour, fresh ground. Add 2 tsp salt as a conditioner to slow it down and improve the taste. Stir to mix the salt and flour.

Put some starter in a bowl (Ronny added about 1/4 - 1/3 cup, but you can use as little as 1 tsp - it just takes longer.) Add some water, about 1 cup, and stir to dissolve. Then stir this into the flour.

Start kneading the dough in the bowl to work the gluten, adding more water as necessary to achieve the right consistency. It's all about feel - different flour, different humidity needs different amount of water. For example, white flour dough can be drier than whole grain dough. You can knead 10 - 15 minutes as you would for yeast-risen dough, but you don't need to do it that long; just long enough for the dough to achieve some elasticity.

This is as far as Ronny took the demo; then we put names in a hat to draw who would get the dough (to rise and bake the bread); it went to Jean H..

According to Ronny's recipe, here is how to continue:

Cover the bowl with a damp cloth, then set a plate over the cloth to help hold in the moisture (to keep the surface of the dough from drying out). Let rise 6 hours or more on the counter. If you let it rise overnight, the second rise (in baking pan) goes quicker.

After the rest, punch it down and work it a bit more. Then shape into loaf and place in greased baking pan. Cover again with a damp cloth and let rest until doubles in size. This takes about 3 - 4 hours if the first rise was not overnight; 2 -3 hours if first rise was overnight.

Place in hot oven (400° F) and bake until internal temperature reaches 190° F, about 30 - 45 minutes. Remove from pan and cool on a rack.

Q: How warm should the water be, for making the dough?

A: It doesn't have to be 105° - 110° F as for yeast; in fact you can start with cold water, if you will be gone awhile (let it rise a bit longer).

Q: How do you get a hard crust?

A: Use a higher oven temperature; add moisture in the oven. For example, using a spray bottle, spray water on the walls and floor of the oven. Or place an old heavy duty cake pan on the floor of the oven; carefully add boiling water to the pan right after you put the bread in the oven, then close the oven door.

General discussion, sourdough stories

- ▶ Had starter kept in fridge, in a yellow container, and fed it nearly daily. We had lots of these yellow containers with things like butter or garlic in them. Grabbed the one we thought was butter, to use on pancakes....what a surprise!
- ▶ Great book: *52 Loaves: One Man's Relentless Pursuit of Truth, Meaning and a Perfect Crust*, by William Alexander (see [Amazon](#) (15) for more)

Resources & References

ESP Articles & Handouts

1. [The EssentialList: Sourdough, an overview](#)
([essentialstuff.org/wp-content/uploads/2011/04/Sourdough_EsL.pdf](#))
2. [The EssentialList: Sourdough recipes](#), contributed by our panel
([essentialstuff.org/wp-content/uploads/2011/05/Sourdough-Recipes_EsL.pdf](#))
3. [Alternative Sourdough Starters](#) (gluten free, etc.)
([essentialstuff.org/index.php/2011/04/17/Cat/alternative-sourdough-starters/](#))
4. ['Sourdough' Pie Crust](#) (a photo-essay)
([essentialstuff.org/index.php/2011/05/23/Cat/sourdough-pie-crust/](#))
5. [The Importance of Grinding your own Flour](#)
([essentialstuff.org/index.php/2011/05/22/Cat/the-importance-of-grinding-your-own-flour/](#))
6. [The Problem of Unfermented Grains](#)
([essentialstuff.org/index.php/2011/05/22/Cat/the-problem-with-unfermented-grains/](#))

Other websites

7. [Sourdough Baking: The Basics](#), by S. John Ross ([www.io.com/~sjohn/sour.htm](#)) includes making a starter, about hooch, proofing the sponge, basic bread recipe, and notes.
8. [World's Easiest and Best Sourdough Bread](#) (YouTube video, 8 minutes)
([www.youtube.com/watch?v=PONxAoHl1qc](#)) uses white flour for the bread; instructions are clear, tho sound is echo-y)
9. Wikipedia on [phytic acid & phytates](#) ([en.wikipedia.org/wiki/Phytic_acid](#))
10. Pleasant Hill Grain: Nutrimill ([www.pleasanthillgrain.com/nutrimill.aspx](#)) and Country Living mill ([www.pleasanthillgrain.com/country_living_mill.aspx](#))
11. [Prairie Heritage Farm](#) ([www.prairieheritagefarm.com](#)) and [Prairie Heritage Farm CSA Programs](#) ([www.prairieheritagefarm.com/2011/02/prairie-heritage-farm-2011-csa-programs.html](#))
12. [Wheat Montana](#) ([www.wheatmontana.com/](#))
13. [Montana Milling](#) ([www.montanamilling.com/](#))
14. [Mother Earth News](#) ([www.motherearthnews.com](#)) articles on Sourdough:
[www.motherearthnews.com/search.aspx?search=sourdough](#)
15. *52 Loaves*, by William Alexander (book on Amazon:
[www.amazon.com/52-Loaves-Relentless-Pursuit-Meaning/dp/1565125835](#))