



Restoring Heritage Grains

The Culture, Biodiversity, Resilience,
and Cuisine *of* Ancient Wheats

ELI ROGOSA

**Baking
with
Einkorn**

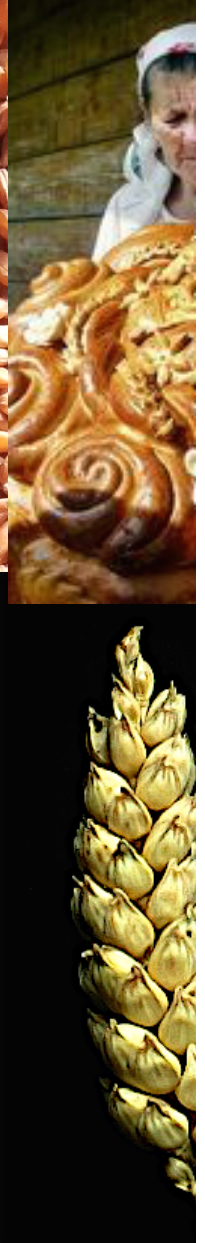
RESTORING HERITAGE GRAINS

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As agrochemical-soaked modern wheat blankets the planet with industrial uniformity, 'Restoring Heritage Grains' introduces compelling solutions for community grain systems by restoring forgotten wheat biodiversity, practical grain growing, fascinating folklore and healthy recipes with gluten-safe ancient einkorn.

CHAPTERS:

1. **Expose** of modern wheat
2. **Forgotten Wheat Biodiversity**
3. **Grain Polyculture** - How to restore landrace wheat in a whole farm system
4. **Grain Folklore**, myths and traditions
5. **Taste of History** - Einkorn recipes from traditional kitchens



BREAD FROM THE EARTH

Eli Rogosa, Heritage Grain Conservancy,
GROWSEED.ORG

Bread makes itself, by your kindness, with earth, rain and sky breathing, with dough under hand, and creativity streaming through you, you become breadmaking itself. Love is not only the most important ingredient, it is the only ingredient that really matters.

THE SIMPLICITY OF SOURDOUGH

Sourdough happens. Ubiquitous microorganisms float all through the air, swim in the water, and live in our gut to help us digest food. Microbes love einkorn. Its nutrient-rich digestibility creates a vital substrate for beneficial microbes to thrive. From the moment that water comes into contact with flour, the wild yeast and lactic-acid microbes that give starter its leavening properties begin to grow, fermenting flour and water into sourdough. The microbes consume the sugars in the flour, breathing in oxygen and breathing out the carbon dioxide that causes dough to rise when baked. Sourdough microorganisms introduce a rich complexity of flavor with a subtle, aromatic tang that imparts superior flavor and nutrient absorbability to bread. The acidity in sourdough helps bread stay fresher longer. The fermentation process strengthens the adhesion of the gluten matrix giving a better crumb structure.

Making a sourdough starter is an easy natural process of combining einkorn flour with pure water. I regard my sourdough microbes as tiny ‘pets’ to care for. The glass jar in my fridge contains the bubbly thick pancake batter-like mother starter. I feed my ‘pets’, ie refresh the starter, by adding equal amounts of spring water and flour every few days and especially the night before I plan to bake. (See the **pre-ferment** section below and Appendix for details.) After taking out a portion for my bread dough, I mix more water and flour into the remains at the bottom of the starter jar, perking it up with renewed bubbly life. If I go away for a long trip, I may clean out the jar and start over if the smell is too acrid upon return. Since antiquity a portion of unbaked dough was saved as a starter for new breads. Pliny the Elder reported that the Gauls and Iberians used beer foam to bake "a lighter kind of bread than other peoples." Wine-drinking cultures such as ancient Israel used a paste of fermented grape skins and flour or wheat bran steeped in wine as a source for starter.

HOW TO MAKE EINKORN SOURDOUGH STARTER

About a week before you plan to bake, mix equal amounts of flour and pure water, ie well water, spring water or distilled water. (Do not use chlorinated water. It will destroy the beneficial microbes.) Repeat the feeding each day for about seven days. After a week of feeding, the starter should be mature, active and ready to use. You will observe that freshly-fed starter will rise and bubble through the day then later collapse when the sugars are fully metabolized. To create an active starter uniquely adapted to your local water, flour and temperature, observe the timing of this cycle in your starter. The best time to feed the starter is when your starter has risen up and just slightly begins to pull down. This is the ripe moment when the microbes are active and hungry.

Day 1

Mix together equal amounts of water and einkorn flour. For example:

2 Tbsp (30g) warm water

2 Tbsp (30g) einkorn flour

Mix well and place in a glass container with a loose top to allow air flow. Stir a few times a day as possible. Store in a cool dark place or in your refrigerator in the summer.

Day 2 - Day 5

Each day stir in:

2 Tbsp (30g) warm water

2 Tbsp (30g) einkorn flour

Your starter is mature when there is a lovely aromatic sweet tangy fragrance and small fermentation bubbles arising throughout the mixture. It may take several experimental batches before you develop the best sourdough adaptation for your unique conditions. Be patient, persevere and keep at it!

Pre-Ferment

Pre-fermentation is a process to feed the microbes in the sourdough starter by adding more water and flour a day before mixing the bread dough, so that the starter is highly active and ready to

use. It is especially important to feed your mother starter the day before you plan to make sourdough bread to get a good rise. This is an age-old practice throughout Europe and the Mideast. Each country has unique pre-ferment traditions. In France, a pre-ferment is called *levain*. It is a *biga* in Italy. In Germany, *sauerteig*. Originally from Poland, a *poolish* pre-ferment is known as a *sponge* in the US. The subtle variables in each sourdough process such as temperature, water quality, and the air itself will give your sourdough a unique *terroir* all its own.

DISCOVER FOR YOURSELF

I must be frank: when I read cookbooks, I look for the overall proportions and often adapt recipes by feel. I learned baking from grandmothers and from playing in the kitchen. So the best way to understand baking with einkorn is to experiment on your own in small batches and compare proportions and ingredients. What is the basic ratio of flour to water? Proportions range from 3 1/2 cups flour to 1 cup water to 3 cups flour to 1 1/2 cups water, which is good for slow-rise Dutch oven bread; to 5 cups flour to 1 1/2 to 2 cups water. The effects of temperature? Timing? Sourdough or yeast? Tap, rain, or spring water? Overnight slow-rise in the fridge? How does sifting out the bran affect the water absorption rate and ratio? Experiment with substitutions, for example: using potato water or cream for the liquid, adding an egg, or grating in cheese. Keep careful records to replicate your successes. Let the mystery of baking transform into experience in your hands. May delicious creativity soar!

EINKORN BAKING TIPS

Soak grains overnight to activate beneficial enzymes and break down anti-nutrient phytates.

Wetter dough. Einkorn absorbs liquids and fats more slowly than modern wheat. The dough is wetter at first. Wait for fifteen minutes after mixing the ingredients so that the liquids and fats are well-absorbed before you fold or knead. If you add more einkorn flour to decrease stickiness, the bread may be too dense later. An overnight slow-rise helps butter or oil incorporate fully. Oil or wet your hands to fold the sticky dough. Use a scraper to shape dough.

Yeast and rising. Einkorn's delicate gluten cannot support the profuse yeasty bubbles of most modern wheat bread recipes. Decrease the amount of yeast by up to half in recipes for modern wheat. Mix, let rest and shape your loaf. Let slow-rise in a cool place. All recipes herein use instant (aka rapid rise) yeast that can be mixed directly into the flour, and does not need to be pre-activated in the water. Another tip to enhance lightness is to rigorously beat whole eggs on high speed in a mixer, then fold in.

Let dough slow-rise overnight in a cool place. For yeasted breads, mix the dough in the morning, let it rise slowly at a cool temperature, and bake after four to six hours, or better yet – overnight in the refrigerator. Even if you use yeast instead of sourdough, an overnight slow-rise in the refrigerator produces the fullest flavor and gluten adhesion.

Use sourdough!! Bio-enlivened flour is easier to digest, enhancing beneficial enzymes and nutrients, has a richer flavor and is healthier. Always refresh sourdough a day prior to using in a pre-ferment.

No kneading. Einkorn bread doughs need minimal kneading. Gentle folding works best. Excessive kneading does not increase einkorn's gluten. Time does. Cover dough with plastic and slow-rise in a cool, dark place so that the gluten matrix can knit together. An overnight slow-rise in the refrigerator is the best!

No punch down. Einkorn's gluten is delicate. Mix, fold, or shape it, slow-rise ferment in a cool place (overnight if possible), and bake. A second rise is not necessary.

Less liquid and fat. Einkorn may be substituted for whole-wheat flour in recipes, however decrease the amount of liquid and fat by 5-10 percent. Whole-grain flour absorbs more water than sifted flour. Be patient.

Weight to volume. When you mill your own flour, you will produce a greater volume of flour from the denser grains. For example: 3 cups (600 g) grain makes 5 cups (600 g) flour.

Blessings are hidden. The carotenoids in einkorn dough will oxidize and darken when exposed to light. Ultraviolet rays in sunshine cleanse and sterilize, therefore fermentation is traditionally protected from sunlight. Store fermenting einkorn dough in cool darkness.

Storage. Avoid storing bread in the refrigerator where it will dry out. Store in a paper or cloth.

NO-KNEAD ARTISAN EINKORN BREAD

BAKED IN A DUTCH OVEN

This is a basic traditional sourdough recipe that can be a foundation for creativity. It is incredibly easy to make even if you've never baked bread before. It looks so beautiful, no one will believe you're not an experienced baker.

Ingredients

Mother Dough (Pre-Ferment)

2 Tbsp (30g) activated sourdough starter or tsp (3g) yeast

½ cup (118g) warm pure (unchlorinated) water

1 cup (120g) einkorn flour

Dough

All of the Mother Dough pre-ferment (268g)

5 cups (600g) unsifted whole einkorn flour

1 tsp salt (6g)

1 cup and ¼ (296g) warm pure water

1 Tbsp olive oil (15g)

1 Tbsp honey or maple syrup (15g)

Note: If you do not add the Mother starter pre-ferment:

Add 1/2 tsp (2g) yeast (or ¼ cup sourdough starter (60g))

Directions

Dry Ingredients: Mix flour and salt together. Wet Ingredients: Mix together the warm water, oil and sweetener together. Add yeast to the dry ingredients or sourdough to wet ingredients. Mix all the ingredients together. Let the dough rest for 15 minutes so that the liquids are well-absorbed. This is a wet dough, so do not be tempted to add more flour. On a well floured work surface, use a dough scraper or your oiled hands to fold dough to the center several times to create a ball-like shape. Place on parchment paper in a large bowl. Cover with a plastic bag or wrap. Let it rise slowly in the cool darkness of a refrigerator overnight.

The next day, preheat an oven-safe heavy pot for 30 minutes at 450°F (232°C). Carefully remove the hot pot from oven with mitts. Use parchment paper to lift the dough into the hot pot, cover, and bake for about 45 minutes. For a crustier loaf, bake for 5 more minutes in uncovered pot. Cool and enjoy.

Optional Variations: Crack an egg into the measuring cup before adding the warm water (still measure up to 1 ¼ cups). Grate half cup (118 g) cheese into flour. Substitute a tablespoon of cream for oil and/or warm milk for water at a 1:1 ratio. Add a cup of blended einkorn sprouts. (Blending avoids hard sprouts on the crust.) For enhanced moistness, substitute strained drained potato cooking water for plain water.

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FOR QUESTIONS AND SUGGESTIONS:
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