

# Breads, Spreads and Grinders

February 2009

By Debbie Kent: [avfoodstorarage@gmail.com](mailto:avfoodstorarage@gmail.com)

*(Gen. 47:12) And Joseph nourished his father, and his brethren, and all his father's household, with bread.*

Jed and Stuart were best friends and next-door neighbors. They did everything together. They even had the chicken pox at the same time. When school was in session ate lunch together. They always tried to eat lunch very quickly so that they could play soccer. However, there was a little problem; Jed's sandwich was always so big that he couldn't finish it very fast. After waiting for him about a thousand times, Stuart finally figured out why it took Jed so long to eat. "It's your bread!" he announced. "Your bread is weird. It's not like regular bread, it's strange looking. Where do you get it?"

"My mom makes it." "What for? You can just go to the store and buy it, and it tastes great—all soft and squishy. Yours looks kind of stiff." "My mom makes it for a lot of reasons," Jed answered. "For one thing, we have a lot of flour in our year's supply, and she doesn't want it to get old."

"What's a year's supply?" "Come over after school, and I'll show you."

After school, Stuart saw the storeroom Jed's father had built. There were shelves full of cans and jars and boxes and barrels, Stuart couldn't believe his eyes. "It's like your own grocery store!" he exclaimed. "Why do you have so much stuff? Can't you just buy more when you run out?"

"We keep extra food in our house in case something happens and we can't get to the store. The leaders of our church have taught us to be prepared in case anything bad happens," Jed explained. "It's not just food we store. We have blankets, candles, toilet paper, soap, matches, a first-aid kit, and lots of other things." "When are you ever going to need all this stuff?" asked Stuart. "We hope we never have to use some of the other stuff, but our church leaders have told us that we need to be ready, just in case."

Late in March, there was a terrible storm. It snowed for days and days, and the roads into town were blocked. No trucks could bring in food, and soon the stores were running out of things. People were getting worried that they wouldn't have enough to eat if the storm didn't quit soon. Things were getting pretty scary. One day Stuart told Jed that there wasn't much left to eat at his house. That night, Jed's mom invited Stuart and his family over for dinner. They had a nice big meal, and Stuart's family wondered where all the food came from. "It's from their year's supply," Stuart explained. He told his family all about Jed's family's "grocery store."

The following day, Jed took a big, warm loaf of homemade bread next door. Stuart's family was very happy to have it. Until the roads were cleared and things were back to normal, the two families shared all they had and made it through the hard time. One day not long afterward, Stuart and Jed were having lunch with some other boys. They were all trying to hurry so that they could get the soccer ball. One of the boys noticed Jed's giant sandwich. "What kind of weird sandwich is that?" he asked. Before Jed could answer, Stuart stood up tall and told the boy, "That's made with year's-supply bread, and it's the best bread in the whole wide world!" Then he sat down and took a bite from his very own giant year's-supply-bread sandwich. Danielle Zane Wilkinson, "Year's-Supply Bread," *Friend*, Apr 1994, 8

**Ezra Taft Benson** *"For over 100 years we have been admonished to store up grain. 'Remember the counsel that is given, , 'Store up all your grain, and take care of it!... And I tell you it is almost as necessary to have bread to sustain the body as it is to have food for the spirit.'* (Quoting Orsen Hyde, *Journal of Discourses*, Vol. 5, p. 17)

- **Grains are the foundation of our long term storage.**
- **The new guidelines are for 300+ pounds per person.**
- **Having several kinds of grains adds variety and nutrition to your diets.**
- **Grains can include: red or white wheat; oats; rice; pasta, corn; barley; spelt; millet; triticale; buckwheat; kamut; quinoa and rye.**

**Wheat is the foundation of most of our Long Term Food Storage Programs.** It is cheap and stores a VERY LONG TIME (Did you know they have sprouted wheat found in the Pyramids thousands of years ago?). The rule of thumb is 300 lbs of grain per person with about 180 of that being wheat. The bigger variety you have in your grain storage the better. It is: healthier, makes fantastic bread and helps elevate appetite fatigue. I don't know about you, but I LOVE bread! I prefer it over boiled wheat or wheat meat about a million to one. So if you would like to eat your wheat in the form of bread you will need to know how to make it and what other ingredients and supplies you will need besides the wheat. A few of these other items might be: yeast; salt; bread pans and/or pizza stone; wheat gluten; dough enhancer/lemon juice/vitamin C; oil and don't forget the GRINDER!!! With this class I hope to give you some tried and true ideas to make your bread making fun and bread so delicious and EASY you will want to make it every day. Thereby, feeding your family healthy, no preservative bread; which gets your bodies used to whole grains; helps rotate your food storage; and will give you BIG satisfaction.

**HINT:** For those of you with family members that are **gluten intolerant** NOW is the time to experiment with alternative grains from which you can make wheat-there are several non-gluten bread making books on the market. Try these websites to get you started. They are full of recipes, helps and support.

[glutenfreemommy.com](http://glutenfreemommy.com)

[glutenfree.com](http://glutenfree.com)

[glutenfreecookingschool.com](http://glutenfreecookingschool.com)

[glutenfreebreadrecipeblog.com](http://glutenfreebreadrecipeblog.com)

### **Parts of Grain:**

Bran: outer covering, high in vitamins, minerals and protein

Germ: high B and E: also protein, fat and mineral, phosphates(brain/nerve food), calcium

Endosperm: inner part where cellulose, starch and gluten are found, little vitamin and minerals found.

White flour is mostly made from this.

**All Wheat is NOT created equal, if you want to make bread it has to be high in gluten & protein.**

**All wheat and it's products are either grown in the winter/spring and are either red/white.**

Hard Winter: high in gluten, good for breads, low in moisture, stores 30+ years

Soft Spring: low in protein gluten (cake, pastries, crackers, etc), stores 5 years

**and**

Red Wheat: kind found in pyramids, most widely grown (hard or soft)

White Wheat: makes lighter, sweeter bread, easier to digest than red wheat (hard or soft)

## **Best Bread Baking Books and Links**

**\* On Chef Mike Lawrence's MUST HAVE list.**

**\* *Artisan Bread in Five Minutes a Day* By Jeff Hertzberg and Zoe Francois**

**\* *The Laurel's Kitchen Bread Book* By Laurel Robertson**

**\* *1000 Gluten-Free Recipes* by Carol Fenster (for Gluten Free Diets)**

**Bob's Red Mill Baking Book: 400+ Recipes Featuring Whole & Healthy Grains** by John Ettinger

**The Bread Baker's Apprentice: Mastering the Art of Extraordinary Bread** by Peter Reinhart

**Whole Grain Breads: New Techniques, Extraordinary Flavor** by Peter Reinhart

**Links:** [Breadtopia.com](http://Breadtopia.com) (full of recipes and great videos on breadmaking)

[TheFreshLoaf.com](http://TheFreshLoaf.com) (lessons; handbook; videos and blogs on breadmaking)

[YouTube.com\\_\\_\\_Artisan Bread in 5 minutes a Day \(lulugoh\)](http://YouTube.com___Artisan Bread in 5 minutes a Day (lulugoh))

[YouTube.com\\_\\_\\_Making No-Knead Bread \(New York Times\)](http://YouTube.com___Making No-Knead Bread (New York Times))

**Contact Mike Lawrence** for further questions or comments:

[michael.lawrence57@yahoo.com](mailto:michael.lawrence57@yahoo.com)

# BEAUTIFUL BREADS

(breadinfo.com)

The first bread was made by pulverizing wheat and making into a paste then it was set over a fire and the paste hardened into a flat bread that kept for several days. Raised bread was made when yeast was accidentally introduced to the paste. Still later they discovered that if they saved a piece of dough from a batch of bread and put into the next day's dough, it would rise. This was the origin of sour-dough, a process still used today.

Through much of history, a person's social station could be discerned by the color of bread they consumed. The darker the bread, the lower the social station. This was because whiter flours were more expensive.. Today, we have seen a reversal of this trend as darker breads are more expensive and highly prized for their taste as well as their nutritional value.

Still thought of as the "staff of life", for centuries bread has been used in religious ceremonies. Even the lord's prayer requests of God to "Give us this day our daily bread" - meaning not merely loaves, but moral sustenance.

Today, bread remains important to our diet and our psyche. It has a prominent place in at the local market, in our cupboards and even in our language. The word "bread" is commonly used as a slang term for money. It connotes importance as when we say that some aspect of our work is "our bread and butter". In many households bread is still served with every meal. **Bread** has a long history for a reason. It is a healthy and nutritious food that fills the stomach as well as the soul. Whether you do it by hand or a machine try making some and discover the magic that is in the very taste and smell of fresh baked bread!

**There are many different kinds of breads:** All made from same basic ingredients.

**Flat bread:** quick and easy; no kneading or rising; quickly baked or stovetop.

(biscuits, pancakes, **tortillas**, crepes, fry bread, and crackers)

**Quick breads:** Easy to mix; usually sweet; no kneading or rising, long bake time

(Amish, applesauce, banana, cinnamon, cornbread, nut, pumpkin, soda and zucchini)

**Muffins:** quick bread; easy to mix; no rising or kneading, short bake time

(quick, applesauce, bran, multi-grain, oatmeal, pepper cheese and sour cream)

**Batter Bread:** Easy to mix; rising; no kneading; baked

(No Knead Breads; Ezekial; WW; WW Raisin; Rice bread and donuts)

**Kneaded Bread:** Easy to mix; requires kneading and rising; baked and stovetop.

(brown, potato, multi-grain, WW, French, flaxseed, buns, pita rye, and bread maker)

**Sourdough:** No yeast, uses starter for rising, stovetop to baked.

(French, pancakes, biscuits, WW, pretzel

## **MOST COMMON MISTAKES**

Too much or too little water: spongy or dry and crumbly

Water is wrong temperature: won't rise

Old yeast: won't rise (see yeast for how to test)

Letting dough rise too fast or too long: bread will be coarse or may fall

Not letting rise long enough: flat, heavy bread

**Years Worth of Bread:** If you eat one loaf of bread a day, you will need 275 lbs of wheat, 4 gallons of oil, 46 lb of honey or sugar, 8 lb of yeast, 4 qts of lemon juice and 8 lbs of salt.

**Brigham Young said:** "If you are without bread, how much wisdom can you boast and of what real utility are your talents, if you cannot procure for yourselves and save against a day of scarcity those substances designed to sustain your natural lives?" (*Deseret News*, July 18, 1860, 153).

## BREAD MAKING TERMS AND HINTS

**CRUSTY BREAD:** Use baking stone/dutch oven or cast iron and steam. Place stone or dutch oven on the bottom shelf of the oven before preheating. It must get really hot, preheat in oven for 30 minutes. To check if ready, drop some water on top of the stone, and if it dances, it's ready -- never touch the hot stone directly. (can spray dough with fine mist from a clean spray bottle just prior to putting in the oven. Then, place the bread dough on top of the stone to bake. **Steaming** during the first 5-10 minutes of baking makes a crispier crust. To do this, fill heated pie pan with 1/2-inch of water. This will cause an immediate burst of steam. Quickly close the oven door to trap the steam, and do not open for at least 10 min. Leave the pan in the oven and remove when the oven has cooled. **Store bread** in paper bag (2 days-stays crunchy); soft- plastic bag (3 days) or freezer.

**DOUGH ENHANCER:** Helps keep bread fresher longer & works with the gluten to make a lighter bread. It also helps make the bread moister and acts as a mild preservative. (1T/cup flour)

**EGGS:** add richness, color, and flavor to the dough and resulting bread

**FATS, oils, butter and shortening:** add tenderness, moistness and flavor to bread. Don't use whipped butter or margarine or low-fat products or your loaf will fail.

**FLOUR:** Whole wheat flour (WW) is heavier than all-purpose and needs a little more leavening therefore needs a little more leavening to achieve the same results.. It also absorbs liquid more slowly. When substituting white flour with WW flour in recipe, reduce each cup of flour by 2 T. Keep extra WW flour in frig or freezer.

**LIQUID:** The type of liquid you use will change the bread characteristics. Water will make a loaf that has more wheat flavor and a crisper crust. Milk breads are richer, with a finer texture. These breads brown more quickly because of the additional sugar and butterfat. Whatever amount of water the recipe calls for start out with less. Humidity in the air will affect the amount of water needed. It is easier to fix dry dough than to fix wet dough.

**MIXED GRAIN FLOUR:** For healthier bread, you can grind any grains (barley, oats, rice, millet, etc) or beans (navy, lima, pinto, lentil, white) into flour and use replace up to 25% of the wheat flour to any bread recipe.

**Ezekiel Mix-** A mixture of: 20 parts wheat, 12 parts Spelt, 4 parts Hulled Barley, 2 parts Hulled Millet, 2 parts lentils, 2 parts Pinto Beans, 1 part Great Northern Beans, 1 part Kidney Beans. Modern food scientists have found that Ezekiel Bread is surprisingly complete in nutrients, containing all 8 essential Amino Acids. You can make your own Ezekiel Mix, or purchase the mix from Walton Feed.

**RISING:** Let dough rise in draft-free place with a temp. of 85-90°. The pilot light in a gas oven warms it to an ideal temperature. If room is cool, put upside-down bowl over dough.

**SALT:** is essential to every bread recipe. It helps control yeast development, and prevents the bread from over rising. This contributes to good texture. Salt also adds flavor to the bread.

**SUGAR:** is the fuel that feeds yeast so it ferments, producing carbon dioxide that makes the bread rise. Some bread recipes depend on sugars in the flour to provide food for the yeast.

**TOPPINGS:** can change the crust of the loaf. Egg glazes are used to attach other ingredients like nuts or seeds or create a shiny, golden crust. Egg white glazes make a shiny, crisp crust. For a chewy, crisp crust, spray the dough with water while it's baking. If you brush milk on the dough before baking, the crust will be softer and tender. Brushing the baked loaf with butter will also make the crust softer. You can also coat with: flour, cracked wheat, corn meal, seeds, herbs, rolled oats, spices, honey.

**WATER TEMPERATURE:** is crucial to yeast rising. If it is dissolved in liquid with sugar or honey, the temperature must be 110-115°. When the yeast is combined with dry ingredients, the liquid should be 120-130°. If using a bread machine water temp. should be 80°. Use thermometer.

**WHEAT GLUTEN** makes a superior bread. It is higher in protein content and this is what gives bread its unique texture. Gluten forms a network of proteins that stretch through the dough like a web, trapping air bubbles that form as the yeast ferments. This creates the characteristic air holes of perfect bread.

**YEAST:** (2 ¼ t. = 1 pkg yeast) Use fresh active yeast (SAF brand-WinCo or Waltons) Adding 50% more yeast will cause bread to rise faster and make lighter loaf of bread. Stores 10+ years freezer/1 year frig.

(Yeast Test) Place 2 ¼ tsp yeast in a glass measuring cup with 1 t. sugar and 1/2 cup warm water (115°), Wait 10 minutes, Yeast should absorb water and bubble up to the one-cup mark forming a foamy crown. If you get close to one-cup mark the yeast is good and active.

## BREAD SPREADS

A spread is defined as anything that can be distributed over a surface, thus a Bread Spread can be anything that you can spread on bread. This can include things such as: butters, peanut butter and jelly, tuna, avocado and even beans. They can be smooth or chunky, sweet or bland. They can be whatever your imagination wants them to be. The examples I've used are but a small sampling of things to spread on bread. I've tried to use things that can be included in your food storage program.

### Great Grinders

Info from: [providentliving.com](http://providentliving.com); [waltonfeed.com](http://waltonfeed.com);  
[survivalcenter.com](http://survivalcenter.com)  
[nutritionlifestyles.com](http://nutritionlifestyles.com)

**Background:** Historically, the process of milling grain to flour was accomplished by passing the grain through a set of grinding stones. Flour from these mills contained all parts of the grain. In the 1800s, commercial flour mills changed to a roller milling system (still used today) that allows the miller to separate the wheat grain into separate components—primarily bran, endosperm, and wheat germ. Removing the bran produces a lighter flour with less roughage. Removing the germ, which is about 10% fat, significantly reduces staleness problems in the flour. This makes a light, longer storing, but not as healthy bread.

Because the cost and complexity of commercial roller mills are beyond the reach of typical households, many types of home mills have been developed and used very successfully over the past century. These home mills have allowed families to significantly improve the quality of the food in their diet and have provided a higher level of self-sufficiency.

Grain grinders come in many shapes and sizes. Some are large and bulky and some can be picked up with one finger. Some take a lot of work and others require only the flick of a switch. The earliest home flour mills used the same technology that was employed historically: grinding grain between two stones or metal burrs and producing flour that has all of the components of the grain. New technology has evolved for home flour mills. This new technology, developed in the past 30 years, centers around the discovery that if grain is hit hard enough and with enough speed, the grain explodes into flour. These use less power and produce less heat. The resulting flour still contains the bran, the wheat germ, and the endosperm, but the flour is finer than that produced by older technology. This flour is a fresh product that should be either used within a few weeks or stored in freezer bags in a freezer.

**There are 3 types of grinders: Stone, Burr and Impact (e=electric / h=hand-powered)**

- **Stone Grinders** are the oldest type of grinder there is and was the only kind until only a few years ago. Stone grinders have two circular grinding stones. One stone turns against a stationary stone. Grooves are cut, radiating out from the center of the stone. These grooves diminish until they disappear towards the outer edges. When grain is ground, it falls through a channel into the center of the two stones. As the rotating stone turns, it pulls the grain out through the channels and is ground, with the flour falling out the outer edges of the two stones. The stones are no longer made from rock but from very hard synthetic materials. They will last a life time if used with care. **Advantages:** adjustable from cracked to fine flour, lasts life time, fast. **Disadvantages:** large, heavy and bulky, will gum up with beans or seeds, expensive. **Examples:** Little Ark(e/h), Silver Nugget(e/h)

- **Burrs** are similar to stones except their grinding wheels are made out of hardened steel. These burrs are sometimes referred to as teeth in grinder advertisements. **Advantages:** will not gum up, adjustable for cracked to fine, safer if grain not clean, lasts long time, turns easier than stone grinders(manual). **Disadvantages:** not quite as fine of flour as stone ground. **Examples:** Champ Juicer(e), Golden Grain(e/h), Back-2 Basics(h), Country Living Mill(e/h), Family Grain Mill(e/h), Daimant (e/h)
- 
- **Impact grinders** use 'blades' placed in circular rows on metal wheels. One wheel turns and the other wheel is stationary like the manual grinders. But this is where the similarities end. When the two wheels are put together the rows of blades intermesh, running microscopically close, yet never touching the blades from the opposite wheel. The rotating wheel turns at several thousand RPM. As grain is fed into the center of the fixed wheel, the interaction between the two wheels 'impacts' the grain and literally pulverizes it into a fine powder as the grain works its way to the outside of the wheels. **Advantages:** very compact and light weight, grinds very fast, makes very fine flour, cheapest electric grinder. **Disadvantages:** blades can break with rocks or metal, noisy (not whisper mill), no cracked wheat, needs electricity. **Examples:** Kitchen Mill(e) /K-Tec (e), Whisper Mill(e) /Wonder Mill(e) , Nutrimill(e)

**Electric vs Hand Grinder** that is a good question. This all depends on what your present circumstances are and any preparations you may want to make for the future. Powered grinders are nice, but the most high speed grinder won't do much good if you find yourself in a power outage. Hand operated mills come in the stone and burr varieties. They are a lot of work, but important to have when there is no power. You might consider a nice electric grinder for every day use, and a hand grinder for emergencies. There are many that can work with electricity or by hand. They are usually much more expensive than if bought separately.

### **Electric Grinder Considerations**

1. **Adjustability:** Can it adjust from cracked to fine flour, what will you need it for?
2. **What type is it:** stone, burr or impact
3. **Speed:** Most electric are fast, grinding a cup of flour in 26-51 seconds.
4. **Noise:** How sensitive are you to noise (K-Tec/ high loud pitched vs whisper mill/quiet)
5. **Size:** Range from compact to bulky How easy will it be for you to store?
6. **Weight:** Range from 8-51 pounds. Will you be able easily move it or need two people?
7. **Hopper Size:** Range from 3-7 cups. I haven't found this to be a problem.
8. **Cost:** They range from \$175-\$400.

### **Hand Grinder Considerations**

1. **Flour Fineness:** The most important thing about a hand grinder is how finely it grinds. If it doesn't grind at least a little bit fine, you will not be able to make good bread. Sometime you will have to put the grain through two times to get it fine enough. Range: 6-8 (8=fine enough for bread)
2. **Grinding Speed:** There is a huge difference in how fast the different grinders process wheat into flour. Of course, the shorter the time, the better. Range: 2-6 minutes per cup/ enough for bread 22-80 min.
3. **Pressure Required to Crank the Grinder:** There is also a huge difference in how hard it is to turn the grinders. Range: 5-18 pounds of pressure (even at 5 pounds you will get tired after about 5 min)
4. **Durability:** How well made is it, how long will it last? Range: easily breakable – very durable.
5. **Cost:** The range from \$40-\$550.

### **Unimportant Hand Grinder Considerations**

1. **Hopper Size:** It takes so long to grind a cup of wheat into flour that the amount of time it takes to add more wheat to the hopper amounts to nothing.
2. **The Way It Looks:** There are pretty grinders and ugly ones. What matters is how easy and well it works.

# Grain Mill Summary, all Sizes & Styles

Following Information from [nutritionlifestyles.com](http://nutritionlifestyles.com)



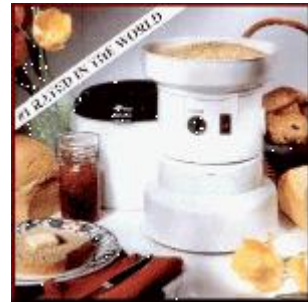
## [The NUTRIMILL Multi Texture Mill \(electric\)](#) [Details](#) \$270

It's the first high-speed stoneless flour mill that has multi-texture capability. The Nutrimill has special TruGrind™ milling heads to mill grain into flour. The difference is that unlike other grain mills, the Nutrimill can produce a coarser grind texture as well, that can be used for corn meal. Grinds all dry grains and beans. Hopper and bowl hold 20 cups grain/flour. Grinds 1 cup in 30 seconds. Grinds grain medium-extra fine. 82 decibels and 1200 watts. It weighs 14 lb. Lifetime warranty.

<http://www.youtube.com/watch?v=7gDJr3r5c5A> (to see it in action)

## [The Wonder Mill \(Whisper Mill\) \(electric\)](#) [Details](#) \$260

The world's first and finest ultra-quiet, high-speed flour mill. The powerful Wonder Mill is one of the quieter mills. This remarkable flour mill is made of the highest quality materials by trained master craftsmen. The Wonder Mill is the most advanced way to mill grain today and has a patented, surgical quality, stainless steel Microburst milling chamber. It grinds all dry grains and beans. Has an 8 c. hopper and 12 c. canister. It grinds 1 c. in 22 seconds. Grinds fine to extra fine flour. It is 85 decibels and 1250 watts. It weighs 12 lbs. It carries a limited Lifetime warranty.



## [The K-Tec Kitchen Mill \(electric\)](#) [Details](#) \$180



It's the first high speed stoneless flour mill small enough to easily store, big enough to do the job. It's a better way to make flour. The heart of The Kitchen Mill is its micronetic milling chamber. This new technology uses surgical quality stainless steel instead of stones to instantly turn any grain in to flour. It grinds all dry grains and beans. The hopper hold 8 c, canister holds 20 c. It grinds from fine to extra fine. 1 c in 45 seconds. It is 96 decibels and 1250 watts. Full 5 year limited warranty and lifetime warranty on the milling heads.

## [The Vital Mill \(electric\)](#) [Details](#) \$180

It had an air filter, a separator cup, a mill lid for wide access, hopper extension, is very quiet, has a clog free-air flow design that eliminates gumming, jamming and plugging, grinds very flour, a self-cleaning milling chamber, it has stainless steel milling heads, a large hopper and a life-time warranty on the entire mill. It grinds all dry grains and beans. Canister holds 20 cups. Grinds 1 c. 35 seconds. It has a 10 year warranty.



---

**The Country Living Mill (hand/can be motorized)** [Details](#) **\$409**

Designed to last for many lifetimes. Now a fine hand mill that can actually out grind many of the electric mills by 10 to 15% and then out grind ALL electric mills by 100% when it really counts! Will grind virtually all dry grains, including wheat, corn, beans, peas, amaranth, etc. Designed to be quickly and simply motorized - no adapter kit necessary. It grinds from cracked to extra fine. And grinds 1 c. in 1 ¼ minutes. Must be mounted. It weighs 15 lbs and has a lifetime warranty.



---

**The Wonder Junior Stone Grain Mill (hand)** [Details](#) **\$169**

It's a pretty big claim to call your product "The World's Best." But we know that after you have used the Wonder Junior Hand Grain Mill that you will agree. For years hand grain mills have either been really cheap or really expensive. And unfortunately their ability to perform has been directly related to their cost. The cheap ones perform poorly and the expensive ones perform great. And we wanted the versatility and high quality of the most expensive mills in a price range that was affordable to the homemaker. We found the perfect storm with the Wonder Junior Hand Grain Mill.



---

**Back to Basics Hand Grinder (hand)** **\$65**

The secret of the Back-to-Basics Grain Grinder is in its milling mechanism. The cone-shaped grinding burrs are self-aligning and made of hardened steel alloy, precision machined to insure long life and smooth, even milling. It's adjustable for any desired flour texture from fine to coarse. It easily grinds grains and beans and even oily things like nuts and also herbs and spices. It is small and compact. Grinds up to 1/2 c flour per minute. It weighs 3 lbs. It has a 2 year warranty.

---

**In my opinion, a hand grinder and electric grinder are both good to have. Electric grinders are FAR faster and easier to grind flour, however unless you have a generator or solar system you won't be able to use it if the power is out.**

**Therefore, a hand grinder is a really good idea for when the power is out (unless of course you just want to eat boiled wheat).**

**There are a few combo models but they are very expensive (over \$500).**

**I have owned and used both the K-Tec and the Nutrimill. They both work very well.**

**The K-Tec is a bit louder and I really like the storage bin of the Nutrimill.**

**As far as the hand grinders, the Country Living Mill grinds the fastest but harder to turn and very expensive. The Back to Basic model and Wonder Junior work similarly but the Wonder Junior seems to be a little better built.**

## Secrets of Great Breads (article from the Prepared Pantry)

Often we field questions about making great bread. Great bread is a matter of using the right ingredients and the right techniques—there's no single secret that will make perfect bread. But really great bread is readily attainable. We've compiled our list of what goes into great bread.

1. The right flour.
2. An understanding of yeast.
3. A good dough conditioner.
4. A baker's thermometer

Now this isn't everything that goes into great bread but the baker that is armed with these four tools are likely to be baking great bread.

To understand how important **flour** is, you need to understand just a little about gluten. Gluten strands are formed from the proteins naturally occurring in wheat flour. It's what gives bread its chewy texture. If you use a flour with a higher percentage of protein, you will have more gluten. Most commercial bread bakers are going to use flours with 10 to 14% protein--bread flour. If you buy your flour at the grocery store be aware that all flours are not equal. For bread you want a bread flour. Name brands are likely to do a better job of holding to a specification and will provide more consistent results. You can get an idea of the protein content from the nutrition label. Divide the grams of protein by the grams in the serving size to get the approximate percentage of protein in the flour (subject to rounding error). For home baking, you want at least ten percent

### How Yeast Works

**Yeast** is a living organism. The gases expelled by the growing yeast are what leavens the bread. The yeast must be growing in the right culture to create the gases to make light airy bread. The right culture is primarily a function of moisture, temperature, and pH or the acidity level.

Bread wouldn't be bread without yeast and yeast can't work without sugars. Yeast is alive—living organisms—and living organisms need food for fuel, in this case, simple sugars. But flour is mostly starch and table sugar is too complex for the yeast before fermentation. Enzymes present in the flour or created by the yeast, break down the starch molecules into sugars. Some of these simple sugar molecules become food for the yeast; others create the sweet flavor we find in a fine bread—even a French bread where there is no sugar added. As the yeast feeds on the sugar, it creates two digestive byproducts—alcohol (ethanol) and carbon dioxide. The carbon dioxide is what leavens the bread—carbon dioxide gases filter through the dough creating loft. The alcohol is evaporated in baking. The biological and chemical actions taking place as the bread ages and rises are called fermentation. Generally, a long, slow fermentation makes for better flavor, texture, and moisture retention. Many fine breads call for “retarding” or slowing down the growth of the yeast with refrigeration. If dough is refrigerated, the yeast grows more slowly. Fermentation still takes place as the amylase enzymes work within the dough and sugar is released albeit at a slower rate. When the dough is warmed and the growth of the yeast takes off, there is plenty of sugar present for the yeast and an excess of sugar to sweeten the bread. When yeast grows more slowly, we find the richer, fuller flavor of breads made with retarded dough.

This brings us to our **dough conditioner**. Dough conditioner alters the pH of the dough (among other things) so that it enhances the growth of the yeast and it makes the dough more extensible. All else being equal, dough conditioner can make a good bread great. You can buy dough conditioner (or **dough enhancer** as it is sometimes called) in some grocery stores. You can use lemon juice as a dough conditioner.

And finally, a **thermometer** has been called the baker's secret weapon. We would not think of making bread without one. We use it to measure water temperature. (When we use our bread machines, we measure the water temperature to exactly 80 degrees—not one degree off. When we make bread in our stand-type mixer or by hand, we use water between 100 degrees and 110 degrees.) We nearly always measure the temperature of the bread when it comes from the oven. And you can use a thermometer to measure the temperature of the dough to make sure that you have the right temperature for your yeast to thrive in. You can buy an insta-read thermometer at most department stores.

