

Nutritional Advantages of Various Types of Flour

Most types of flour are composed mainly of carbohydrates, but the quantity varies according to the type of substance used to create the flour. Some types of flour (especially those ground from nuts) contain more fat and protein than carbohydrate, which is why it is difficult to produce nut flours that are as dry and finely ground as flour produced from grains. Various types of flour milled from grains (especially wheat) are the types that most people are accustomed to, however flour varieties ground from seeds, legumes, tubers, and nuts are often used and have an equal number of nutritional benefits. The table below describes key nutrients present in various types of flour.

Shelf Life

Most types of flour keep well in a sealed container in a cool, dry, and dark location.

- The original paper packaging is fine for long term cabinet storage as long as the package has not been open.
- Most types of flour keep longer in a cool, dry cabinet if stored in a sealed plastic or glass container.
- The refrigerator is a very good storage area for flour, but the use of a sealed container is even more important to prevent the flour from absorbing moisture as well as odors and flavors from other foods stored in the refrigerator.
- The freezer is usually the best location for long term storage. Use sealed plastic containers or freezer bags for optimum freshness.
- Flour that does not look or smell good should not be used.



Barley Flour

Description: Flour produced from whole barley is much more nutritious than flour ground from pearled barley because the bran is left intact. Whole barley flour is considered an excellent ingredient for providing soluble fiber, which helps to reduce cholesterol in the blood.

Smart Bread: “Barley flour is slightly sweet and adds a tender, cake-like texture to breads.”

Substitute: “barley flour for up to one-fourth of the wheat flour in loaf breads or for up to one-third of the wheat flour in rolls and pastry dough.”

Shelf Life: up to 4 months in the freezer in a sealed container or if tightly wrapped. The flour has a short shelf life when stored in a cabinet.

Key Nutrients: Soluble fiber, Niacin, Iron



Buckwheat Flour

Description: Buckwheat flour is a rich source of nutrients and it is gluten free. In spite of its name, buckwheat is not a type of wheat, but is actually an herb plant related to rhubarb. Buckwheat flour is an excellent wheat flour substitute for people who are allergic to gluten (celiac disease).

Smart Bread: “Groats are known as kasha. Savored in pancakes, waffles...delicious in breads.”

Substitute: “buckwheat flour for up to one-fourth of the wheat flour in bread recipes.”

Shelf Life: up to 2 to 3 months in the refrigerator and for 6 months or longer in the freezer in a sealed container or if tightly wrapped.

Key Nutrients: Protein, Calcium, Magnesium, Phosphorous, B vitamins, Iron, Gluten free

Flaxseed Flour



Description: Like whole flaxseed, the flour is equally nutritious. It is an excellent source of cholesterol-reducing omega-3 fatty acids and soluble fiber. It is also one of the best sources of lignin, which may play a role in fighting certain types of cancer.

Shelf- Life: 2 or 3 months if properly stored in a cool, dry cabinet in an airtight container that does not permit light to pass through. It will keep 6 months in the freezer.

Other Considerations: exposure to light will deteriorate the effectiveness of the omega-3 fatty acids in the flaxseed meal/flour, which are so effective in reducing cholesterol. When shopping for flaxseed meal/flour, look for packages that protect it from exposure to light.

Key Nutrients: Omega-3 fatty acids, Soluble fiber, Lignin

Kamut Flour



Description: Kamut (Ka moot') grain is organically grown and the flour is highly nutritious with higher levels of protein and potassium than regular wheat. The gluten in Kamut flour is often said to be easier to digest than the gluten in wheat flour.

Smart Bread: "...a delicate, buttery flavor and chewy texture. People with wheat allergies should consult physician or nutritionist before using kamut."

Substitute: "...lower in moisture. Try increasing the liquid by 1 table-spoon per cup of kamut flour substituted for regular whole wheat flour."

Shelf Life: up to one year freezer storage if properly stored in a sealed container or if tightly wrapped.

Other Considerations: whole-grain Kamut flour usually lasts longer than whole-grain wheat flour because it has a lower moisture content than wheat.

Key Nutrients: Protein, Potassium, Niacin, Thiamin, Zinc, Magnesium, Iron, Riboflavin

Millet Flour



Description: The natural alkalinity of millet flour makes it easily digestible, so it is very beneficial for people with ulcers and digestive problems. It is also believed to be one of the least allergenic varieties of flour.

Smart Bread, Substitute: "millet flour may be substituted for one-fourth of the wheat flour in breads."

Shelf Life: millet flour will keep for about 2 months in the refrigerator and 6 months or longer in the freezer. The flour should be tightly wrapped for refrigerator or freezer storage. A completely filled and sealed glass jar also works well for refrigerator storage.

Other Considerations: can become rancid quite rapidly if it is not properly stored. It is usually best to grind millet as needed to ensure the best flavor.

Key Nutrients: Iron, Magnesium, Calcium, Phosphorous, Manganese, Zinc, B vitamins, Fiber, Gluten free

Brown/ White Rice Flour



Description: All types of rice flour are high in protein, but brown rice flour has a higher level of B vitamins, iron, and fiber than white rice flour because the bran is included. Since rice flour contains no gluten, it is beneficial for people who cannot tolerate gluten in their diets because of a severe allergic reaction (celiac disease).

Smart Bread: “whole-grain rice ground into flour, brown rice has a light, sweet flavor.”

Substitute: “brown rice flour for up to one-fourth of the wheat flour in breads for a lighter taste and cornmeal-like texture.”

Shelf- Life: when properly stored, in a tightly covered container in a cool dry location, white rice flour may last indefinitely.

Key Nutrients: Protein, Calcium, Phosphorus, Potassium, Thiamin, Niacin, Gluten free

For more information see website:

<http://www.recipetips.com/kitchen-tips/t--1027/types-of-nonwheat-flour-grains.asp>

Rye Flour



Description: Rye flour is available in light, medium, or dark varieties, which indicates the level of bran that is incorporated into the flour. Additional bran increases the nutrient level of the flour.

Smart Bread: “Cooked or sprouted rye berries may also be added to bread dough for a nutty, crunchy effect.”

Substitute: “replace up to one-half of the wheat flour in breads with rye flour for a hearty, moist loaf.”

Shelf Life: whole-grain rye flour should be stored in the refrigerator, tightly wrapped or in an airtight container, where it will keep for several months. It will keep in the freezer for up to a half-year.

Other Considerations: If stored properly, rye flour with the germ removed will keep for longer periods than whole-grain rye flour.

Key Nutrients: Dietary fiber, Vitamin E, Calcium, Iron, Thiamin, Phosphorus, Potassium

Amaranth Flour



Description: Amaranth flour contains more fiber and iron than wheat and it is a good source of calcium. Amaranth flour is high in protein and when it is used in combination with other flours (such as wheat), the protein value is as beneficial as fish or poultry.

Smart Bread: “amaranth has an earthy, wood taste and smells like fresh corn silk.”

Substitute: “amaranth flour for up to one-fourth of the wheat flour in breads. Cooked amaranth can be incorporated into bread dough as a part of the liquid.”

Shelf- Life: up to 6 months in the freezer if properly stored in a sealed container or if tightly wrapped.

Other Considerations: will not keep well if it is stored in a warm location or if it is exposed to sunlight. The flavor and aroma of amaranth flour will become bitter if it is stored improperly or for an excessively long period.

Key Nutrients: Protein, Calcium, Iron, Zinc, Gluten free



Wheat Flour

Wheat Class Definition: Hard White Wheat (HWW) was added as a U.S. market class in 1990. White wheat contains the same healthy levels of whole grain fiber that red wheat does but does not have as strong a flavor and dark color. White wheat is actually golden in color, tastes sweeter and is lighter than its hard red wheat cousins.

Description: There are many forms of wheat flour, but whole-wheat varieties are the most nutritious. It can be added to white flour to improve the nutritional value. Studies have shown that the insoluble fiber in wheat bran

may help fight colon cancer and at very least it is beneficial for the digestion.

Shelf Life: 6 months to one year in the freezer if stored in tightly sealed plastic containers or if tightly wrapped. It will keep for only a few months if stored in a cabinet.

Other Considerations: a drawback with whole-wheat flour, regardless of the milling process, is that its shelf life is shorter than highly processed white flour varieties due to the presence of the wheat germ, resulting in an unsaturated oil content that is higher than refined flour. The potential for rancidity is greater if whole-wheat flour is kept for long periods and particularly if it is not stored under refrigerated conditions. It is best to store whole-wheat flour in a tightly sealed container in the refrigerator or freezer.

Key Nutrients: Protein, Fiber, Iron, B vitamins, Thiamin, Niacin, Magnesium, Phosphorus, Zinc



All purpose Flour

Description: All-Purpose Flour as the name suggests, all-purpose flour is suitable for most purposes and is perhaps the most commonly used wheat flour for general baking and cooking. It is produced from a combination of high protein bread flour and low protein cake flour. The bread flour is milled from a variety of hard wheat, which contains high levels of gluten. This is a necessary component for baked items to rise properly.

The cake flour is milled from a variety of soft wheat, which is lighter, contains lower levels of gluten, and results in baked items that are tender and less dense.

The combination of the flours gives the all-purpose flour just the right balance for most baked goods.

All-purpose wheat flour is available in bleached and unbleached varieties. Wheat flour becomes white (actually off-white) naturally through oxidation, which in earlier times was the method used by flour millers to create white flour. This eventually became impractical because of the time and space required for large quantities of flour to oxidize naturally so chemical bleaching was developed, which hastens the whitening process.

The advantage of using bleached flour rather than unbleached is that the chemicals used for bleaching (usually chlorine, which evaporates after it is added to the flour) act as a preservative so that the flour will not develop an off flavor or spoil after a short period. The chemicals also prevent dough from becoming discolored and provide more consistent results when baking, however the chemicals affect the gluten strength of the flour, therefore bread makers often prefer unbleached flour. Unbleached all-purpose flour is often better for preparing several types of dough because the dough is easier to handle and the resulting baked goods are quite tender.

All-purpose flour can be used for almost any recipe requiring flour such as breads, cakes, and pastries; as a coating for meat, vegetables, and other food items intended for frying or sautéing; and as a thickening agent for gravies, sauces, and stews.

Shelf Life: for cabinet storage, up to 8 months if properly stored in a sealed container or if tightly wrapped, and for refrigerator storage, up to one year.

Oat Flour



Description: Oat flour is very nutritious and is considered a good source of the soluble fiber betaglucan, which helps to decrease cholesterol in the blood.

Smart Bread: “Rich in cholesterol-lowering soluble fiber, oats have a delicate, slightly sweet flavor that’s delicious in breads. Like barley flour, oats flour adds a cake-like texture to works especially well in dessert breads and sweet rolls”

Substitute: “oat flour for 25 to 30% of the wheat flour in yeast breads.

Oat flour can be made at home by milling rolled oats in blender [or mill] .”

Shelf Life: up to 3 months cabinet storage if stored in sealed containers or if tightly wrapped and up to 6 months if stored in the freezer.

Key Nutrients: B vitamins, Vitamin E, Copper, Iron, Zinc, Magnesium, Phosphorous, Calcium, Thiamin

Corn Flour



Description: Corn flour is a good source of several important nutrients. It also contains protein, but not to the same degree as many other types of flour. Since it is gluten free, it is an excellent wheat substitute for people who are allergic to gluten.

Smart Bread: “not just for cornbread, cornmeal give pumpernickel and anadama breads their characteristic texture. Unbolted cornmeal is the whole-corn kernel ground into meal; bolted cornmeal is nearly whole grain. Degermed is refined...fewer nutrients and fiber.”

Shelf Life: up to one year in a cool, dark cabinet if properly stored in a sealed container or if tightly wrapped. The shelf life increases if the flour is stored in the freezer.

Key Nutrients: Vitamin A, Manganese, Potassium, Gluten free

Bread Flour



Description: Bread flour is unbleached, high-gluten flour that typically contains 99.9 % hard wheat flour with malted barley added to increase the yeast activity, making it ideal for bread making. The high gluten content is necessary in order for bread to rise effectively. The use of bread flour results in larger bread loaves with a lighter and less crumbly texture. Bread flour is most often used in the commercial baking industry and is often confused with gluten flour, which has a higher gluten content than bread flour. Bread flour is also referred to as unbleached flour.

Shelf- Life: several months in a cool, dry cabinet when stored in a sealed container or if tightly wrapped, and up to one year in the freezer.

Gluten—Smart Bread: “Yeast breads made with white (refined) flour rise better than whole-grain breads because white flour contains more gluten, the protein that gives strength and elasticity to dough. Breads made with 100% whole-grain flours will be very dense unless gluten is added. Gluten may be purchased [in] many grocery stores. Add 1 1/2 teaspoons of gluten for each cup of whole wheat flour used in a recipe. With the addition of gluten to bread doughs, you can replace all the white flour in your bread recipes with whole wheat flour.

Other whole-grain flours such as oatmeal, rye, or barley flour can comprise one-fourth to one-half of the flour in yeast breads. These flours have even less gluten than whole wheat flour; so, add 2 to 3 teaspoons of gluten for each cup of these flours used.

Be sure to use pure wheat gluten, usually referred to as *vital* wheat gluten in your recipes.” (source: Smart Bread...)

Lecithin—A Super Fat:

“Commercial bread bakers frequently add *lecithin* to yeast breads. Derived from soybean oil, lecithin is an emulsifier-it makes things mix better. Lecithin is highly recommended for bread baking. Why? For the same amount of fat, lecithin conditions the dough much better and produces a softer-textured, higher-rising loaf. Lecithin is available in either liquid or granular form; both forms are available at natural food stores.

How are liquid and granular lecithin different? Lecithin liquid is a very thick, sticky oil-it is almost impossible to work with because it sticks to everything. Lecithin granules are puffed up bits of oil that can be easily measured and used in recipes. Because the granules are puffed, they cannot be substituted for liquids one-for-one. If you use the liquid form, use half as much because it's more dense. If you prefer, an equal amount of vegetable oil, butter, or margarine can substitute for lecithin granules. Breads made with oil will be slightly denser than those made with lecithin.

Like all fats, lecithin liquid has 120 calories per tablespoon (the granules half the calories because they are less dense). Unlike most fats though, lecithin is rich in nutrients, especially vitamin E, iron, phosphorus, and choline. Refrigerate lecithin to prevent rancidity.”

Slashing Salt:

“Salt is needed in yeast breads to control the rising of the yeast. Salt-free breads rise too quickly and have a weak texture. However, salt can be reduced by half with no adverse effect. To reduce salt in yeast breads, simultaneously reduce amount of yeast so the bread does not rise too fast. This is especially important for breads made in automatic bread-makers that knead, rise, and bake at specific times. Doughs that contain too little salt will rise too rapidly, then fall before automatic baking begins. In general, reduce yeast by the same percent that salt is reduced. For example, if you reduce salt by half, reduce the yeast by half too. You may have to experiment with the recipe a few times to get it just right.

Dough Enhancers:

“Certain ingredients, like gluten und lecithin, enhance the quality of yeast doughs. Two other dough enhancers are *ascorbic acid* (vitamin C) and *diastatic malt powder*. Both are added to commercial bread flour to improve their performance in yeast breads.

The addition of ascorbic acid to dough makes it rise better. This is especially important for sweet breads, which tend to rise very slowly. Ascorbic acid changes the pH of the dough, making it slightly more acidic and, therefore, more hospitable to yeast. To enhance rising, you may add 1/4 teaspoon of ascorbic acid powder to the ingredients for a 1 1/2--pound loaf. For a 1--pound loaf, use slightly less (fill a 1/4-teaspoon measure two-thirds full). Three teaspoons of lemon juice or vinegar added to a 1 1/2--pound loaf (or 2 teaspoons added to a 1--pound loaf) can substitute for ascorbic acid.

Many breads include ingredients like fruit juice, buttermilk, and yogurt. These slightly acidic beverages have the same conditioning effect on dough that ascorbic acid does. Do not add ascorbic acid to recipes that contain these ingredients. Too much acid slows the growth of yeast.

Diastatic malt powder is made from sprouted barley. This dough conditioner contains enzymes that produce a finer texture, enhance flavor, and retain freshness in yeast breads. Add 1/2 teaspoon of diastatic malt powder to the ingredients for a 1 1/2--pound loaf. For a 1--pound loaf, use 1 1/3 teaspoon (fill a 1/2 teaspoon measure two-thirds full).

Look for ascorbic acid and diastatic malt in specialty stores and natural food stores.”

All About Gluten

Gluten is the substance that gives dough its elasticity, strength, and makes the dough rise. Wheat has a high level of gluten. When baked goods are made with various types of non-gluten flour, wheat flour is often added so that the dough is able to rise effectively. Many types of flour milled from various grains, seeds, legumes, tubers, and nuts do not contain gluten.

Gluten forms only when liquid is added to flour causing a reaction of the insoluble proteins gliadin and glutenin. Gliadin has the consistency of syrup when it is combined with water and glutenin becomes very rubbery. The combination of the two is what gives dough its sticky and elastic qualities. The quantities of these proteins are highest in flour milled from wheat, but the level is also high in barley, rye, and triticale. Grains related to wheat, such as spelt and kamut®, also contain the proteins necessary to form gluten.



Breads and baked goods made solely with non-gluten flour have different characteristics than baked goods made with gluten flour. The texture is much more dense and crumbly because the dough made with gluten-free flour does not rise. Many people prefer the dense texture. Various types of baked goods made with gluten-free flour are also full of flavor and some have even better nutritional profiles than baked goods made with gluten flour.

Some individuals have an allergic reaction to gluten and therefore must not consume products containing gluten. Some non-gluten flours that can be safely consumed by gluten-intolerant individuals are rice (brown and white), potato, chickpea, quinoa, cornmeal, soy, sorghum, and buckwheat.

Besides breads and pasta, which are the most obvious foods containing gluten, there are many other products that may contain gluten that are not so obvious. Foods as varied as distilled vinegar to canned soups may contain gluten, so reading the label is very important to ensure that a product is gluten-free and has been processed in a gluten-free environment (even small traces of gluten contamination in a manufacturing environment can be transferred to other foods).

Listed below are some of the not-so-obvious products that may contain gluten:

- Dairy Products including some varieties of ice cream, some cheese spreads, and some fat-free products may contain gluten.
- Vegetables that are breaded, creamed, or scalloped usually contain gluten.
- Fruits that are canned may contain a thickener made with gluten.
- Canned soups and dehydrated soup mixes often contain varying degrees of gluten.
- Condiments that contain gluten include soy sauce, some types of ketchup and mustard, some varieties of dry spice blends, vinegar distilled from grains, some types of salad dressing, which may contain a modified starch often containing gluten, and some types of rice syrup that may contain barley malt for flavoring.
- Candies may contain gluten if flour is one of the ingredients. To prevent candies from sticking together, some types may be dusted with flour that contains gluten even though the ingredients in the candy may be gluten-free. It is best to read the label to make sure the product was manufactured in a gluten-free environment.
- Imitation seafood products such as imitation crabmeat may be created with binders containing gluten.
- Extracts and Flavorings are often combined with alcohol distilled from grains that contain gluten.
- Beverages that contain gluten include malted milk, some chocolate drinks, some flavored coffees, beer and ale, spirits distilled from grains, and some carbonated beverages, such as root beer.
- Envelope adhesive may contain gluten so it is best not to seal envelopes by licking the glue.
- Medications including some types of prescription and over-the-counter pills may contain gluten.

It is also important to remember that many foods prepared in restaurants that contain gluten-free ingredients may be prepared next to or on the same surfaces as high-gluten foods, so gluten contamination may be possible. An example would be using the same griddle to prepare a gluten-free food that is used for a high-gluten food,

Fruit Pizza

Makes 1 twelve-inch or 4 six-inch pizzas

Crust:

2 cups whole wheat flour
½ cup sugar 1 tsp. baking powder
¼ tsp. salt 1 T. water
½ cup margarine, room temperature
1 egg, slightly beaten



Fruit—strawberries, canned or fresh peach slices, kiwi, blueberries, bananas, etc. Stir together flour, sugar, baking powder and salt. With fork, mix in margarine until texture of fine meal. Stir in egg. If dough is very stiff add up to a tablespoon of water. Form into a ball. Cover; refrigerate 1 hour.

For a large pizza—spray 12-inch pizza pan with cooking spray. Spread dough evenly bringing dough up slightly at the edge of pan. Bake in preheated 350-degree oven 20 minutes. Remove from pan onto a large plate. Cool.

For small pizzas—cut four 6-inch circles from aluminum foil or parchment paper and place on baking sheet. Divide dough into 4 portions. Spread dough evenly onto foil circles, making a lip at the edge of dough. Bake in preheated 350-degree oven 12 to 15 minutes. Remove to cooling rack. Arrange fruit on crust. Pour glaze evenly over fruit. Let stand 2 hours before eating.

Glaze—Mix 2 tablespoons sugar, 4 teaspoons corn starch and ¼ teaspoon cream of tartar; stir in 1 cup cold liquid (ex. ½ cup orange juice and ½ cup water) Bring to a boil; let boil over medium heat for 1 minute. Pour over fruit.

Nutritional analysis: With 20 slices, one slice provides approximately: 122 calories, 2 g protein, 18 g carbohydrates, 2 g fiber, 5 g fat (1 g saturated fat, 0 trans fat), 11 mg cholesterol, 10 mcg folate, 1 mg iron, 111 mg sodium.

Courtesy of the Montana Wheat & Barley Committee

Pita Pockets

Emily Hancock—Morton Ward

4 ½ to 4 ¾ cups flour 1 T. dry yeast
1 ½ tsp. sugar 1½ tsp. salt
1¾ cups water (120°) 2 T. oil

Combine 2 cups flour, yeast, sugar and salt. Mix well. Mix hot water and oil. Blend at low speed until moistened. Beat at medium speed for 3 minutes. Gradually stir in enough remaining flour to make a firm dough.

Knead 10 minutes. Let rest 20 minutes, covered. Shape into 12 even balls. Cover and let raise 30 minutes.

Roll out to a 6" circle three at a time. Bake on a cooling rack in a 500 degree oven for 3 minutes.

Easy Oatmeal Bread

Makes 4 small loaves

2 cups rolled oats
3 cups boiling water
½ cup molasses
2 packages active dry yeast
3 ¼ to 3 ¾ cups bread flour
2 cups whole wheat flour
1 tablespoon salt



In large bowl add water to oats. Cool to 120 to 130 degrees. Stir in molasses and yeast. Add 2 cups bread flour; mix thoroughly by hand or with dough hook. Mix in whole wheat flour, salt and enough bread flour to make a soft dough. Cover; let rest 10 minutes. Knead with dough hook or turn dough onto floured surface; knead 10 minutes or until dough is smooth and elastic.

Form into 4 loaves* and place in 7½x3½ x2-inch pans coated with nonstick spray. Let rise 1 hour or until doubled. Bake in preheated 450-degree oven 10 minutes; reduce heat to 350 degrees and bake 20 to 25 minutes, or until loaf sounds hollow when tapped with fingers. Tent with foil during last 15 minutes to prevent over browning. Remove from pan to cooling rack.

*Or form into 2 loaves and place in 9x5x2½-inch pans. Bake an additional 10 minutes at 350-degrees.

Nutritional analysis: With 12 slices per loaf, one slice provides approximately: 78 calories, 3 g protein, 16 g carbohydrates, 1 g fiber, 1 g fat (0 saturated fat, 0 trans fat), 0 mg cholesterol, 25 mcg folate, 1 mg iron, 148 mg sodium.

Courtesy of the Montana Wheat & Barley Committee

Sourdough Starter—Wheat

1/2 teaspoon honey 1/2 cup whole wheat flour
1/2 cup non-chlorinated water (such as bottled)
1/2 cup whole wheat flour
1/2 cup non-chlorinated water (such as bottled)

- In a glass or ceramic bowl, mix together the honey, 1/2 cup whole wheat flour, and 1/2 cup of water. Use a wooden spoon to stir. Cover lightly, and place in a warm place. Stir twice a day for 5 days.
- **On the 6th day**, mix in 1/2 cup of water and 1/2 cup of flour using a wooden spoon. Don't worry about lumps, for the yeast will eat them! Cover and let stand in a warm place to ferment for 1 day. When you get lots of bubbles and foam on top, you know the starter is active and ready to use. The starter will separate with the flour on the bottom and 'hootch,' a yellow liquid, on top. Just mix well before using or feeding.
- **Store starter in a wide mouth glass jar.** I use waxed paper and a rubber band in place of a lid, as metal utensils or containers will contaminate the starter. Once refrigerated, the starter only needs to be fed once a week. Use half, and feed the remaining half to keep it alive for the next time.

www.allrecipes.com/Recipe/Sourdough-Starter---Wheat

Pumpkin Bread—*Betty Crocker cookbook (modified)*

2/3 cup shortening 2 2/3 cups sugar
 4 eggs 1 can (16 oz.) pumpkin
 2/3 cup water 1/3 cup barley flour (optional)
 3 cups whole wheat flour
 2 tsp. baking soda 1 1/2 tsp. salt
 1/2 tsp. baking powder 2 tsp. pumpkin pie spice

Heat oven to 350°. Grease bottoms only of 2 loaf pans, 9x5x3 inches, or 3 loaf pans, 8 1/2x4 1/2, 2 1/2 inches, may use several mini pans. Mix shortening and sugar in large bowl. Add eggs, pumpkin and water. Blend in flour, baking soda, salt, baking powder and pumpkin pie spice. Pour into pans. Bake until wooden toothpick inserted in center comes out clean, about 1 hour 10 minutes for regular sized loaves. Loosen sides of loaves from pans; remove from pans. Cool completely before slicing. To store, wrap and refrigerate no longer than 10 days.

* If using spiced canned pumpkin, omit spices.

Super Chocolate Chunk Cookies—*Juanita Smith*

Makes about 2 dozen cookies

1 pkg (8 oz) Nestle semi-sweet chocolate chunks
 1/2 cup (1 stick) butter
 1/2 cup granulated sugar
 1/4 cup firmly packed brown sugar
 1 egg
 1 teaspoon vanilla
 1 cup all-purpose flour
 1/4 teaspoon salt
 1/2 teaspoon baking powder
 1 cup chopped pecans or walnuts

Melt 1 ounce chocolate chunks; set aside.

Beat butter, sugars, egg and vanilla until light and fluffy. Stir in 1 ounce of melted chocolate. Mix in flour, baking powder and salt. Stir in chocolate chunks and nuts. Refrigerate 30 minutes.

Heat oven to 375°F. Drop dough by heaping tablespoonfuls, about 2 inches apart, onto greased cookie sheets. Bake for 8 minutes or until lightly browned. Cool 5 minutes on cookie sheets. Remove cookies and finish cooling on wire racks.

***Melt** an additional 4 oz. of chocolate to dip cookies into, if desired. Dip 1/2 of each cookie into melted chocolate. Let stand on waxed paper until chocolate is firm.

Fresh Tomato Salsa—*www.recipezaar.com*

1 cup chopped seeded plum tomatoes or chopped seeded roma tomatoes (about 4)
 1/2 cup chopped scallions, greens included
 1/2 cup chopped fresh coriander
 1 tablespoon lime juice
 1 tablespoon grated lime rind
 1 teaspoon olive oil
 1/2 jalapeno pepper, seeded and finely minced
 (wear rubber gloves when handling)

Mix all ingredients. Enjoy

Black Bean Dip—*www.recipezaar.com*

2 cups cooked drained black beans
 4 teaspoons tomato paste
 3 tablespoons water
 2 cloves garlic, minced
 2 teaspoons lime juice
 1/2 teaspoon ground cumin
 1/2 teaspoon salt (to taste)
 1/8 teaspoon cayenne pepper (to taste)
 2 tablespoons mild green chilies, chopped

Process all ingredients except green onions and chilies in a blender or food processor until smooth. Stir in chilies and place in a serving bowl or spread onto crackers.

Popped Wheat—*Rita Eschmann, Normal 1*

1. Heat a pan with a tiny bit of oil (any kind).
2. Dump a handful of raw wheat into the oil and mix it up, cover.
3. Pretty soon it will start popping (sort of like popcorn). When it slows to nothing, dump wheat on a paper towel to drain.
4. Sprinkle with a little salt if you want, or even garlic salt.

Dump on salads or eat by itself. It makes a wonderful chewy treat.

Sour Cream—*Mesa Home Storage Center*

1 cup cottage cheese (store-bought or home-made)
 1 TBSP. lemon juice

Instructions: whip in blender until smooth.

Cottage Cheese—*Junket box recipe*

¼ Junket Rennet Tablet
 ½ cup water
 1 gallon skim milk
 ¼ cup buttermilk
 1 teaspoon salt
 1/3 cup cream

Dissolve Rennet Tablet in water by crushing. Set aside. In large saucepan, heat skim milk to 70* F. stir in buttermilk and Rennet Tablet solution, mixing well. Cover with towel and let stand at room temperature 12 to 18 hours until firm curd forms. To test for a firm curd, remove a milk sample at a point near the edge of the saucepan with a spoon. The curd is ready to cut when the coagulated milk sample holds its shape and at the edges are sharply defined.

Cut curd into ½ inch long pieces using a long knife. Heat curd slowly over hot water until temperature reaches 110* F. Hold curd at 110* F. for 20 to 30 minutes, stirring at 5-minute intervals to heat curd uniformly. Pour mixture onto fine cheesecloth in a colander and drain off whey.

After whey has drained 2 to 3 minutes, lift curd in cheesecloth and immerse in pan of cold water 1 to 2 minutes, stirring and pressing with a spoon. Then immerse in ice water 1 to 2 minutes. Drain the curd until it is free from whey and place in large bowl. add salt and cream and mix thoroughly. Chill.

Please note: the use of any type of lactaid milk with Junket Rennet Tablets will cause custard to not set.

Evaporated Milk—*Mesa Home Storage Center*

1 cup water
 2/3 cup powdered milk (non-instant)

Blend.

Sweetened Condensed Milk—*Mesa Home Storage Center*

1/2 cup hot water
 1 cup sugar
 1 cup powdered milk (non-instant)

Blend thoroughly in blender. Can be stored in refrigerator or frozen.

Holiday Fudge—*Juanita Smith*

2 T. butter
 2/3 cups evaporated milk (try powdered milk recipe)
 1 1/2 cups sugar
 1/4 tsp. salt
 2 cups mini marshmallows
 2 cups Nestle milk chocolate chips
 1/2 cup chopped nuts (of your choice)
 1 tsp. vanilla

Combine butter, evaporated milk, sugar and salt in a medium saucepan. Bring to a boil over medium heat; stirring constantly. Boil 4-5 minutes; stirring constantly. Remove from heat. Stir in marshmallows, chocolate chips, nuts and vanilla. Stir vigorously for 1 minute or until marshmallows are melted. Pour into foil lined 8" square pan. Chill until firm. Cut into 1 1/2" squares.

Variation:

Cookies and Cream Fudge—

Substitute:

white chocolate chips
 1 1/2 cups Oreo cookies, crushed

Omit:

Milk chocolate
 Nuts

Pinto Bean Fudge—

Adds fiber to the fudge

Add:

1 cup cooked pinto beans, drained & mashed

Hummus—*Megan Bakaitis, Normal 2*

2 cups cooked chick peas
 1 handful of fresh parsley (about 10 stalks)
 2-4 cloves fresh garlic
 3/8 tsp salt
 ½-¾ cup Tahini
 (Sesame seed paste available at international food stores)
 ¼ to ½ cup water

Blend everything but the water in a food processor until very fine. Add enough water to make the Hummus the consistency of refried beans. Serve with pita bread, radishes and cucumbers. Can also be used as a dip for crackers or chips.

100% Whole Wheat Bread

The key to really great 100% whole wheat bread is to extract the best flavors from the whole wheat and temper the harsh tones that sometimes accompany whole red-wheat flour. Good whole wheat bread has an almost nutty taste without a bitter aftertaste. A long fermentation gives the yeast a chance to produce its own flavors and convert the starch to sugar. By refrigerating the dough overnight, you can make excellent 100% whole wheat bread.



Yeasts perform differently at low temperatures. In this recipe, the dough is mixed the day before and refrigerated. The acids and enzymes produced by the yeast at lower temperatures temper the harshness of the whole wheat and develop wonderfully complex bread flavors. It's no more work than other recipes; you just mix the dough the day before.

Bakers note: *This bread should be very light and fluffy, not dense. The secret of making it so is to make sure that the dough rises fully both in the first rise and in the pans. The dough will fill two 5 x 9-inch loaf pans and should be very soft and puffy before baking. If you let it over-rise, you may see a blister or two in the dough. Poke the blisters with the point of a knife and hurry the bread into the hot oven.*

Ingredients

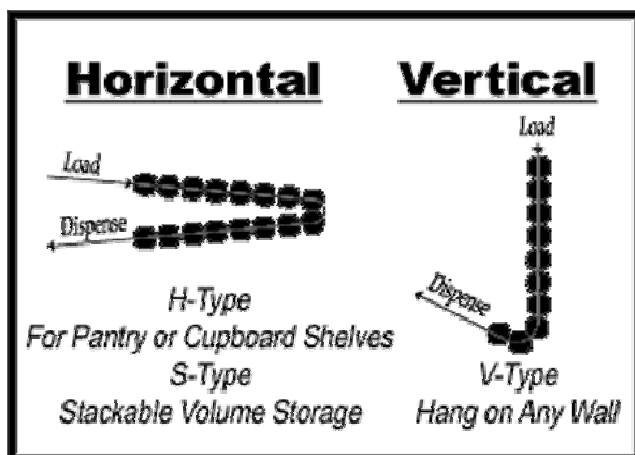
3 cups fine-ground whole wheat flour
2 cups water
1 seven gram packet of instant yeast (or two teaspoons)
1/2 tablespoon sea salt
4 tablespoons lecithin or butter
1 teaspoon dough conditioner (or lemon juice)
1 3/4 to 2 3/4 cups of whole wheat flour—up to 6 cups total for this recipe
1/3 cup brown sugar
2 tablespoons wheat gluten
1/4 cup fine-ground barley flour

Directions

1. Place three cups of the flour in the bowl of your stand-type mixer. Add the yeast and water (lukewarm). The water should feel warm to the touch. Mix with a whisk until blended. Allow to rest for 30 minutes or until the yeast mixture forms a sponge (a light foamy look).
2. Add the salt, sugar, and lecithin or butter and continue mixing. Add most of the remaining flour, the wheat gluten, and dough conditioner and continue mixing at a medium speed for at least four minutes adding more flour as needed to reach a soft dough consistency. (It is important that the dough be mixed for at least four minutes to develop the gluten.) The dough should clear the sides of the bowl but will be soft, not firm, to the touch.
3. Once the dough is mixed, place it in a large greased bowl, turning once to coat both sides, and cover with plastic wrap. (optional)..Refrigerate overnight or for up to three days...Step 4; if you choose to refrigerate.
 4. in the day that you would like to bake your bread, remove the dough from the refrigerator and let it warm to room temperature--about three hours.
5. Let dough should rise to nearly double in size. Once the dough has risen punch down and form the loaves. You may need to coat your hands with oil if the dough is sticky. Lay the loaf gently in a well-greased loaf pan and cover with plastic wrap. Repeat with the second loaf. Let double again in size, about 1 1/2 hours or longer.
6. Preheat the oven to 350 degrees. Once the dough has doubled (the loaf should be very puffy), place the two loaves on a shelf in the top half of the oven, well-spaced so that air can circulate between the loaves. Bake for thirty minutes or until done. Remove the bread from the pans and cool on wire racks. Let it cool completely before cutting.

CanRacks.com—Build Your Own Can Storage Racks

The Concept is Simple. The Details are Critical!



Our Can Rack Features:

Front or Top-loading	Racks can Accommodate Cans: Small: Tomato Paste Size to
Front Dispensing	Large: #10 (Gallon Size) Racks Are Built in Modular Units from One-Cell to Several Cells (To Suit Your Space Avail- ability)
Automatic Dispensing (First in—First out)	No More Outdated and, There- fore, Wasted Food

Plans for the Do-It-Yourselfer Standard Plans \$14.95 1st Class Postage Paid!

Can racks of various kinds have been around for a long time, but how many of them actually function properly? You may have tried the refrigerator racks for soda pop; you know, the kind where the cans lock-up at the back end.

Our rack designs consider all of the things that can go wrong and the details are coordinated to provide free flow of the cans under all loading conditions.

ONE SIZE DOES NOT FIT ALL!

Don't waste time and material experimenting. We provide user tested, professionally detailed drawings and instructions.

The racks are built from simple, inexpensive materials, available at your Home Center. A table-saw is suggested for cutting materials, but cutting can be done with a circular saw or even by hand.

Material for the construction of a 4-cell rack, to store 52-three-inch diameter cans (the most common size), will cost as little as \$10.00.

A typical small pantry, behind a door 2'-0" wide by 6'-8" high, with 24" deep shelves, can accommodate about 400 cans of food, in various sized cans. **All visible, easily accessed and automatically rotated.**

For serious food storage, the S-series racks are stackable & occupy a floor space 24" x 48". They can be stacked a maximum of 5-units high (or 6'-0 max height). A typical bank will hold over 400 cans of various sizes.

A weekend's work could have your system in operation.



Source: CanRacks.com

Home Flour Mills—Church Purchasing Guidelines

Home Flour Mills

An efficient and reliable home flour mill is an important tool in grinding grain into flour for use in home storage cooking. Flour mill design has evolved over the years.

When choosing a home flour mill, you may want to consider the following product speci-

Electric mill

- Stoneless
- High-speed impact-milling chamber
- Milling rates of up to 40 lbs. of fine flour per hour
- Produces a minimum of heat
- Can process other commodities such as corn, rice, oats and legumes into flour
- Compact size that has the look and feel of a quality kitchen appliance
- Recommended by others who are successfully using this same mill
- Does not have a manual power option
- Constructed of metal and plastics, without any wood

Hand mill

- Stoneless
- Gear-driven milling mechanism with roller burrs
- Does not have an auger
- Can be adjusted to either grind harder, dry grains into flour or to roll moister grains into flakes
- Recommended by others
- Does not require great effort or force to operate



What You Need to Know Before Purchasing a Grain Mill or Flour Mill

There are many things to consider before making your final selection when purchasing a grain mill.

A list of questions I would consider are as follows:

Do I want a manual or electric grain mill?

- If I want a manual grain mill, do I really have time to hand grind all the time?
- If I want an electric grain mill, do I want to have the option to hand grind when needed?

What will I be using the flour from my grain mill for?

- It's important to know this, as the grind consistency produced by many grain mills is not fine enough or course enough for some applications.

Is a noisy grain mill going to bother me?

- Some grain mills are very loud, particularly impact chamber mills such as the Wonder Mill, Nutrimill, and Blendtec Grain Mill.

Will flour dust from my grain mill be an issue?

What is my price range?

Some of the most popular [electric grain mills](#) are the Wonder Mill (formerly the Whisper Mill Grain Mill), Nutrimill, and Blendtec Flour Mill. For [manual flour mills](#), the Country Living and Family Grain Mill are two of the most popular. I will list each one with it's high points, and low points to help you select which flour mill will work best for your application.

Source for page 2 as well: <http://www.everythingkitchens.com/article-grain-mills-flour-grinders.html>

Electric Grain Mills

The [Blendtec Grain Mill](#) is one of the best buys for your money. Priced at a modest 179.00, this grain mill has an adjustable grind and can grind course to very fine flour - plenty fine enough for bread. Grinds very quickly with a 24 cup flour pan. Drawbacks? Very loud, and will not grind very course grinds, if you are wanting to make cereals, cornmeal, and other grinds of a course consistency, and has no manual option. Will grind pretty much all non-oily grains. This Grain Mill has stainless steel grinding blades - a health advantage over stone grinding burrs, as stone grinding burrs usually are bound with aluminum oxide. If you want fine flour for breads, and want it for a decent price, and need to grind a lot of flour without emptying the pan, this is likely the flour mill for you.

The [Wonder Mill Grain Mill](#) was formerly the Whisper Mill. The company who made the Whisper Mill went out of business, and their design was bought out by another company who is making it under the name "[Wonder Mill](#)". The [Wonder Mill](#) has been very popular. Priced at 239.95, this wheat mill is a little more expensive than the Blendtec Wheat Grinder. However, the Wonder Mill Grain Mill has a nice advantage in noise level over the Blendtec Grain Mill - still very loud, as it is an "impact chamber type mill" but not nearly as noisy as the Blendtec. The grinding consistency is an adjustable fine to course flour, but will not do very course grinds such as corn grits and bulgar wheat. No manual option. Can grind 12 cups at a time. Will grind pretty much all non-oily grains. This grain mill has stainless steel grinding blades, and a self cleaning milling chamber. This mill has a pretty clean operation, leaving less flour dust in the air than most electric mills. If you like all the features of the Blendtec Wheat Mill, but are willing to pay a little more to save your ears, the [Wonder Mill](#) could be an excellent selection.

The [Nutrimill Wheat Grinder](#) is the premium of the electric grain mills. Priced at 269.99, this flour mill can grind very fine flour and also has a little more adjustability than the Wondermill Grain Mill or the Blendtec Wheat Grinder on the course side, as the Nutrimill can grind as course as a corn meal consistency. Quieter than the Blendtec Flour Grinder and about the same as the Wonder Mill on noise level. This flour mill will grind pretty much all non-oily grains, and has no manual option, though the manufacturer has considered making one. It is just not available yet. This Grain mill has a 22 cup capacity, stainless steel grinding blades and a self cleaning milling chamber. An excellent selection if you like all the features of the Wonder Mill, but are willing to pay a little more to get a little more versatility on the course grinding side of the spectrum. See [Family Grain Mill](#) Below. The Family Grain Mill is manual or electric.

Manual Grain Mills

The [Country Living Grain Mill](#) is one of the highest quality grain mills ever made. You could drop it on the floor, and it would likely hurt the floor more than the grain mill. It's one of those high quality items that could be passed to the next generation. This flour mill uses stainless steel grinding burrs and has a lot of adjustability. With this grain mill you can grind a flour fine enough for bread (though not quite as fine as the electric mills listed above) and as coarsely as desired. This flour mill can be motorized, though the motor, if bought from the manufacturer, is very expensive (right around the price of the mill itself). This grain mill can be motorized using a washer or dryer motor, and comes with instructions for doing this. If you motorize this grain mill, you are able to have the ease of use of an electric mill, but still have the ability to use it if the lights go out. Excellent for the Survivalist. Drawbacks? Most people don't like to grind grain by hand. They think they will, then they try it, and they don't. It takes about 2-3 minutes per cup of flour even if you are grinding as fast as you can go. This is normal for a manual grain mill and actually fast compared to some, but is not necessarily right for everyone, unless you plan on motorizing the unit. This wheat mill is excellent for the person who wants a manual mill, and wants high quality.

The [Family Grain Mill](#) is not as high quality as the Country Living Grain Mill, but has its definite advantages. Don't get me wrong - the [Family Grain Mill](#) is German made and of high quality, it just can't compare to the all-metal construction of the Country Living Grain Mill. This manual grain mill's advantages lie in its ease of use. The [Family Grain Mill](#) is the easiest to turn grain mill we have ever tried. Some manual grain mills are so hard to turn that you feel like you need to be a muscle builder to use them. The Family Grain Mill is so easy to use that even a 7 or 8 year old child could do it. The output is about the same as the Country Living Grain Mill - 1 cup per 2-3 minutes of fast grinding, but is done with a lot less effort. The Family Grain mill also has a huge advantage in price, starting at just 94.95 for the manual version. Another advantage to this grain mill is that it is modular, so VERY easy to motorize. You have the option of buying a hand crank base, a motor base, grain mill attachment, flaker mill attachment, plus an array of other food processing attachments, and they all twist on with a snap to either the manual or electric grain mill base. All the attachments will fit onto the Bosch Bread Mixer with an adaptor, which will save you a ton of money if you already have a Bosch Mixer. Very versatile, as you can see. The [Family Grain Mill](#) does not grind as finely most of our electric mills or quite as finely as the Country Living Mill, but on the finest setting, the flour is still acceptable for bread making. Not recommended for pastry flour. Perfect for the person who wants to grind flour easily by hand, but wants an easy way to motorize the unit, or the flexibility to add other attachments.

The [Back to Basics Grain Mill](#) is only recommended for those doing smaller amounts of grinding, or for those who only want a course grind. This Wheat Mill will grind flour, but not as finely as the mills listed above.

Cereal Grains - Seeds of grasses

Barley

- **Hulled (whole grain)** - Inedible hull removed; bran, endosperm and germ intact
- **Pearled** - Inedible hull removed; bran removed; cooks faster than hulled barley; less chewy than hulled barley
- **Barley Flour** - Flour made from hulled or pearled barley; can be used in bread baking in combination with other flours

Corn

- **Hominy** - Hull removed; entire endosperm intact
- **Grits** - Hull removed; endosperm broken during milling
- **Cornmeal** - Husk and germ almost all removed; ground white or yellow corn
- **Corn Flour** - Finely ground cornmeal

Oats

- **Regular Rolled** - Oat kernels steamed and pressed; entire kernel
- **Quick Cooking** - Oat kernels steamed, pressed and subdivided

Rice

- **Brown** - Entire grain intact
- **White (or polished)** - Bran removed
- **Parboiled (or converted)** - Bran removed; kernel soaked, steamed & dried
- **Wild Rice** - Commercially cultivated; longer cook time than regular rice; more chewy, nutritious and expensive than regular rice
- **Rice Flour** - Usually made from white rice; can be made into rice paper

Rye

- **Rye Flour** - Less gluten, more soluble fiber than wheat flour

Wheat

- **Wheat Germ** - Embryo of grain; rich in unsaturated fat; removed during milling
- **Bulgur** - Entire grain, soaked, cooked and fractured
- **Cracked Wheat** - Entire grain, subdivided
- **Enriched Flour** - Thiamin, riboflavin, niacin, iron and folate are added
- **Bleached Flour** - Yellow pigments are removed by bleaching

	Texture	Contains
All-purpose Flour	Intermediate	Combination of hard & soft wheat
Bread Flour	Coarse	Long extraction of hard wheat
Cake Flour	Fine	Short extraction of soft wheat
Pastry Flour	Fairly Fine	Short extraction of soft wheat
Whole Wheat Flour	Very Coarse	Bran, germ, endosperm

Flour Classifications

	Protein Content	Seeded	Applications
Hard Red Winter	9.5-13.5%	Fall	Yeast Breads, Hard Rolls, Noodles
Hard Red Spring	12-15%	Spring	Hearth Breads, Hard Rolls, Hamburger Buns
Soft Red Winter	8-11%	Fall	Flat Breads, Cakes, Pastries, Crackers, Snack Foods
Soft White	8.5-11.5%	Fall or Spring	Flat Breads, Cakes, Noodles, Crackers
Hard White	10-15%	Fall or Spring	Yeast Breads, Noodles
Durum	11-15%	Spring	Pasta, Couscous

Additional Information:

U.S. Department of Agriculture, www.usda.gov
 Wheat Foods Council, www.wheatfoods.org
 Nat'l Barley Foods Council, www.barleyfoods.org

Grains of Truth about— Bulgur

Definitions—

Bulgur is white or red, hard or soft, whole wheat kernels that have been soaked, boiled, dried, then removing 5 percent of the bran and cracking the remaining kernel into small pieces. The result is par-cooked, cracked wheat. Bulgur differs from cracked wheat in that it is pre-cooked.

History—

Arab, Israeli, Egyptian and Roman civilizations record eating dried cooked wheat as early as 1,000 B.C. Evidence shows the Chinese ate this grain food as early as 2,800 B.C. The Roman word for bulgur is *cerealis*, after Ceres, the goddess of harvest; Israelites called it *dagan*, a word meaning “bursting kernels of grain;” other Mid-Easterners called it *arisah*, and it is a mainstay in the diet.

Availability—

Bulgur is sold in supermarkets, in bulk bin commodity stores, health food stores and through mail order under a variety of labels. Packaged in boxes or plastic bags, it may be sold as a pilaf or “tabbuli” mix and may be spelled a variety of ways. In the store, it can be found near the pasta, rice or hot cereal, or in a specialty food aisle.

Storage—

Bulgur should be stored in air-tight containers in a cool, dry place. It will keep well at room temperature or in the refrigerator for five to six months. Frozen, it keeps indefinitely.

Preparation—

- Do not wash or rinse bulgur before cooking.
- When cooking, avoid lifting the lid; bulgur needs no stirring.

Nutritional value—Bulgur adds fiber, protein and complex carbohydrate to the diet. A serving of bulgur equals 1 ounce (3 tablespoons) dry or ½ cup prepared. One serving provides:

Calories 76	Carbohydrates 17g
Cholesterol 0 mg	Dietary Fiber 4 g
Fat 0 g	Folate 16 mcg
Iron 1 mg	Potassium 62 mg
Protein 3 g	Sodium 5 mg
Selenium 1 mcg	

WheatFoods
C O U N C I L

—look for recipes
www.wheatfoods.org

- Bulgur can be soaked or cooked to be edible. Use twice the amount of liquid as bulgur. To soak, add hot liquid to bulgur, stir and let stand, covered, 30 minutes or overnight (refrigerated).
- Bulgur continues to swell after cooking if moisture is present. It more than doubles in volume, so be sure to use a large enough pan.
- Prepared bulgur can be refrigerated or frozen in containers for later use.
- Bulgur can be used in meatloaf, soups, stews, casseroles and meats or sauces for Mexican or Italian dishes. To start with, use one part prepared bulgur to two parts meat.
- Stir prepared bulgur into waffles, pancakes, muffins, salads or baked goods of all types to add a nutty flavor without the fat.
- Experiment with bulgur as a main entrée or side dish with seasonings, vegetables, nuts or small amounts of meats or fish.

To Cook:

STOVETOP—

Serving	Bulgur	Water
1 (½ cup)	3 tablespoons	⅓ cup + 1 tbsp

Add water to bulgur; boil. Cover; simmer 15 minutes. Let stand 5 minutes.

MICROWAVE—

Serving	Bulgur	Water
1 (½ cup)	3 tablespoons	¾ cup

Add ¼ teaspoon oil and dash of salt

Combine ingredients in a 1½-quart microwave safe container. Cook on high 12 minutes, turning container every 2 minutes. Let stand 5 minutes.

Make Bulgur at home—

Wash wheat in cool water and discard water. Simmer wheat in fresh water (enough to cover wheat) until wheat is tender. Drain. Spread wheat thinly on cookies sheet or shallow pan and dry in oven at 200° F. until very dry so that it will crack easily. Crack wheat in moderate size pieces using a hand mill, grinder or blender. Put cracked wheat through a colander or sieve to get uniform pieces; then return larger pieces through blender.

This processed bulgur when thoroughly dried is easily stored and may be used in many wheat recipes. It makes an excellent meat extender when used in meat loaves, meat balls, chili and recipes where rice is used; Soak overnight in salt water. (Recipe from—Mesa Home Storage Center)

Bulgur Vegetable Chili

Features zesty spices, chunky vegetables and is an excellent fiber source.

4 cups tomato juice, boiling	1 cup chopped onion
1 ½ cup bulgur	2 cloves garlic, minced
2-3 stalks celery, chopped	2-3 carrots, chopped
2 teaspoons cumin	2 teaspoons basil
2 teaspoons chili powder	¼ teaspoon salt
¼ teaspoon black pepper	1/8 tsp. cayenne pepper
2 tablespoons oil	2 tablespoons lemon juice
1 ½ pounds fresh (or 1-28 oz can) tomatoes, chopped	
1 large green bell pepper, chopped	
1 15-ounce can red kidney beans	
1 15-ounce can no-salt tomato sauce	

Combine boiling tomato juice and bulgur; cover. Soak 15 minutes; reserve.

Sauté garlic, onions, celery, carrots, cumin, basil, chili powder, salt, and black and cayenne pepper in oil; add bell pepper. Simmer until tender.

Add tomatoes, beans, tomato sauce, and lemon juice and bulgur mixture; simmer just until heated through. Serve hot with bread sticks or bread and grated cheese. Makes 12 servings.

Note: Chili is thick and may easily be thinned by simply adding more tomato juice to suit your tastes.

Nutrient analysis—One serving provides: 167 calories, 6 g protein, 32 g carbohydrates, 7 g dietary fiber, 3 g fat, 0 mg cholesterol, 58 mg calcium, 745 mg potassium and 210 mg sodium.

Three-Grain Pilaf

A good way to add fiber and variety.

1 tablespoon vegetable oil	1 cup dry bulgur
1/2 cup dry white long-grain rice**	
1/2 cup dry pearled barley	4 cups hot water
2 cubes or 2 tablespoons bouillon granules	
1/2 cup coarsely grated carrots	1/2 cup chopped onions
1/2 cup sliced almonds, toasted (optional)	

Add oil to wok or skillet and heat on medium-high. Add grains and sauté 7 minutes, stirring occasionally.

Dissolve bouillon in hot water and stir into grains; add vegetables. Cover, reduce heat and simmer 25 to 30 minutes. Stir occasionally until liquid is absorbed and grains are tender.

Remove from heat, let stand 5 minutes and fluff with fork. Garnish with almonds. Makes 7 cups.

**Do not substitute minute or brown rice.

Variations: Season with black pepper or herbs. Add other vegetables such as chopped green pepper, red pepper, celery, peas or broccoli.

Nutrient Analysis—One cup (2 servings) provides 192 calories, 5 g protein, 39 g carbohydrates, 3 g fat, 0 mg cholesterol, 6 g dietary fiber, 22 mg calcium, 181 mg potassium and 33 mg sodium.

Tangy Vegetable Bulgur

A hearty main dish so good you won't miss the fat.

Meat Marinade:

1 pound skinless chicken breast fillets, boneless pork loin, tenderloin, or beef top sirloin steak
2 tablespoons chopped fresh mint*
1 6-ounce can frozen limeade concentrate, thawed
2 teaspoons minced garlic

Vegetable Bulgur:

1 cup chopped onions	2 teaspoons minced garlic
1 cup diced celery	1 T. chopped fresh mint*
3 T. fresh minced parsley	1 14 ½ ounce can broth
½ cup water	1 cup bulgur wheat, uncooked
1 cup shredded carrots	1 cup sliced red peppers
Fresh mint leaves	Cashew nuts, optional

Trim fat from meat and cut into thin strips 2 ½ -inch long. Place meat, limeade, mint and garlic in a sealable plastic bag, turning to coat, and refrigerate.

Meanwhile, combine onions, garlic, celery, mint, parsley, broth and water in medium pan; bring to a boil. Add bulgur, cover, reduce heat and simmer about 15 minutes or until liquid is absorbed. Stir in carrots and red peppers; keep warm on low heat.

Drain marinade off meat. In a non-stick skillet, cook meat 4 to 5 minutes or until done and no longer pink.

Spoon bulgur onto serving platter; arrange meat strips on top. Garnish with fresh mint leaves or cashew nuts. Serve immediately. Makes 4 main dish meals.

*Dried mint may be used. If doing so, use only half the amount.

Nutrient Analysis—One serving (using chicken) provides 447 calories, 43 g protein, 58 g carbohydrates, 11 g fiber, 5 g fat, 96 mg cholesterol, 77 mg calcium, 861 mg potassium, and 456 mg sodium.

Hearty Bulgur Salad

A colorful, tasty way to add more fiber to the diet.

1 cup dry bulgur	2 cups warm water
1 1/2 cups diced tomatoes	1/2 cup thinly sliced green onions
1/2 cup diced green pepper	
2 cups peeled and diced cucumber	
10 radishes, diced	1/4 cup minced parsley
1 teaspoon seasoned salt	1/4 teaspoon black pepper
1/3 cup lemon juice	1 tablespoon minced fresh mint

Combine bulgur and water; let stand until bulgur is soft, about 20 minutes. Strain off excess liquid. In a large salad bowl, toss together all ingredients. Refrigerate until serving. Makes 6 cups.

Variation: Black olives, drained kidney beans and corn may be added.

Nutrient Analysis—One cup provides 102 calories, 4 g protein, 23 g carbohydrates, 1 g fat, 0 mg cholesterol, 6 g dietary fiber, 30 mg calcium, 313 mg potassium and 245 mg sodium.

“Off the Shelf Meal Planning”

Another Approach to Food Storage Preparedness

(Recipes for meals made from non-refrigerated grocery store ingredients)

So you have a good start on the basics. Obediently you've been building up a year's supply of wheat, beans, honey, water, milk, case lots of vegetables, fruit and soup etc. etc.. . You have an updated 72 hour kit ready to run should you need to! Then IT happens!! Warnings are heard... you leave your home. Perhaps a horrific tornado has touched down. Miraculously it misses your home but the neighborhood looks war stricken (maybe it actually was.) Power has been out for days with no idea of when it will be returned. Phone lines are down. You're tired and scared... as are your children. And though you are grateful you can come back to your home and that all escaped injury, the immediate question weighs you down, “Okay, so we have all this food stored, **“What's for dinner”?**”

Playing that sort of scenario out in my mind I have been determined to make **part** of our food storage preparedness plan to include desirable, simple meals that could be made from ingredients purchased at a “normal” grocery store. I set out gathering **main dish recipes with ingredients that would not require refrigeration**. In a crises situation I also wanted recipes at my finger tips which I could easily prepare, that my family would like (well enough) and that I'd have all the ingredients for. Thus our family's *Off the Shelf* recipe collection began.

The binder displayed is like ones we gave to our children as a Christmas gift this past year. It's not fancy and is not complete. It is **meant to be added to... personalized**. Certainly we all don't like the same things. I invited them to contribute their ideas and asked them to critique the recipes I came up with... then we put the ingredient lists together and came up with **one shopping list**. Since then interested sisters in our Morton Ward have been contributing recipes for a Morton Ward version.

When Sister Smith learned of our families' *Off the Shelf* book she invited me to share the idea at our Stake's Food Storage Social. I have put most of what is in our *Off the Shelf Recipe Collection* on a PDF file. I have also **included a shopping list of the ingredients for ten of the meals**. You are welcome to down load these and use them as you like. However, I'm pretty sure you will prefer to use your own recipes which would make your family happier... especially for your 10 x 10 recipes. **The important thing is to come up with a plan that will work for you and follow through with it.**

“If ye are prepared ye shall not fear” ... (D&C 38:30)

Using 10 x 10

Food Preparedness Formulas

For a Three Month Supply of *Off the Shelf* “Normal” Main Dishes

Select at least 10 “*Off the Shelf*”* main dishes your family will eat.

Make a shopping list of all ingredients needed for these 10 meals.

(Keep a copy of this list with you whenever you grocery shop.)

Our goal is to purchase at least 10 times the needed ingredients.

Date and Rotate!

Keep the 10 x 10 items on your list in stock.

(Use one meal a week to rotate ingredients and familiarize your family)

Possible “*Off the Shelf*” Recipe Book Main Dish Categories

Recipes Using Canned Ham

Recipes Using Canned Sea Food

Recipes Using Canned Chicken

Meatless Recipes

Recipes Using Pasta

To Prepare for Job-Layoffs, Illness, Unexpected Expenses

Add another 10 x 10 Three Month Supply of Main Dishes. . .

Using Refrigerated Ingredients.

For Long Term Emergency Situations

Put the above two 10 x 10's together, integrate them with 10 recipes using basic BEANS & THINGS recipes and we could each come up with a personalized food storage plan we can each get a handle on.

BEANS & THINGS

Recipes Using Grains, Beans, Dehydrated Foods and so forth

Hopefully these sort of recipes will encourage us to learn how to use food items we have traditionally stored for “emergencies” in our everyday baking, sprouting, in main dishes, side dishes as well as in yummy desserts.

If you are interested in a PDF file of our *Off the Shelf* book email me,

Lois McAllister <loismcallister@yahoo.com> or call 266.8656

Leavening Agents & Quick Breads

Leavening Agent - A gas (or material that produces a gas) that lightens dough or batter

Most baked products are leavened by:

- **Air**
 - Folding beaten egg or egg white into batter
 - Creaming sugar into shortening
- **Steam**
 - High proportion of water to flour
 - Excess water turns into steam
- **Carbon dioxide**
 - **Sodium Bicarbonate + Acid**
 - Baking Soda (sodium bicarbonate)
 - With addition of an acid, baking soda reacts to form carbon dioxide
 - **Baking Powder**
 - 25% dry baking soda
 - 50% dry acid
 - 25% starch
 - Double-acting baking powder has slow and fast acting acids
 - **Fast Acting Acid**
 - Most leavening occurs in cold dough
 - Ex: sour milk, cream of tartar, monocalcium phosphate monohydrate
 - **Slow Acting Acid**
 - Most leavening occurs in oven
 - **Yeast**
 - ***Saccharomyces cerevisiae***
 - **Active dry yeast**
 - Lasts 1 year unopened at room temperature, several years in freezer
 - After opening, good for several weeks at room temperature
 - **Instant yeast**
 - Made from more active yeast than active dry yeast
 - Can be added directly to flour without rehydration
 - **Compressed Cake**
 - Soon dies at room temperature
 - Good for 3-4 weeks in refrigerator
 - Good for 3-4 months in freezer

Optimal Conditions for Rehydrating Yeast—

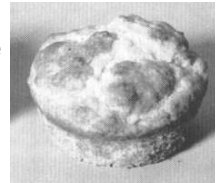
- Rehydrate in water 109-115° F (43-46° C)
- Too cold - substances leak from cells
- Too hot - yeast is inactivated

Quick Breads—Baked product made with flour that does not rely on microorganisms to produce the carbon dioxide for leavening

Biscuits—Combine flour and leavening agent. Cut in fat until mixture resembles coarse crumbs. Add liquid all at once, stir until mixture thickens. Knead 10-20 times. Let sit before cutting and baking.



Muffins, Pancakes & Waffles—Mix dry ingredients together. Mix wet ingredients together. Combine wet and dry ingredients but do not over mix.



- Cakes, cake doughnuts, cream puffs, popovers

Quick Bread Ingredients and Their Functions

- **Flour**—Structure from starch and gluten
- **Liquid**—Hydrates starch and protein; dissolves sugar, salt, leavening agent; steam for leavening
- **Salt**—Taste; influences flour hydration
- **Leavening Agent**—Texture
- **Fat**—Tenderness; lubricates gluten
- **Sugar**—Tenderness; sweetness; interferes with gluten formation
- **Eggs**—Air incorporation; emulsification; structure

Adjustment for Higher Altitudes (>3000 feet)

- Reduce Leavening Agent
- Increase Water
- Increase Flour

Quick Bread Recipes

Basic Drop Biscuits

2 c. flour
1 T. baking powder
1/2 t. salt
1 T. sugar
1/3 c. shortening
3/4 - 1 c. milk

Preheat oven to 425° F. Stir together dry ingredients. Cut the shortening into the dry ingredients until mixture resembles coarse crumbs. Add milk all at once and mix until a dough forms. Combine ingredients but do not knead. Drop by tablespoons onto greased cookie sheet. Bake 12-15 minutes or until golden brown. Makes 12 biscuits.

Basic Muffins

2 c. all purpose flour
1/4 c. sugar
1 T. baking powder
1/2 t. salt
1 egg
1 c. milk
1/3 c. vegetable oil

Preheat oven to 400° F. Line muffin pan with paper liners. Sift together dry ingredients. In separate bowl mix together wet ingredients. Combine wet and dry ingredients until just moistened. Fill muffin cups about 2/3 full. Bake about 20 minutes, or until top springs back lightly when touched. Makes 12 muffins.

Whole Wheat Muffins

1 c. white flour
1 c. whole wheat flour
4 t. baking powder
1/2 t. salt
1/2 c. brown sugar
1 c. milk
1/3 c. oil
2 eggs

Preheat oven to 450° F. Line muffin pan with paper liners. Mix dry ingredients together. Mix wet ingredients together in separate bowl. Combine wet and dry ingredients until just moistened. Put into muffin cups and bake 15 minutes. Makes 18 muffins.

Buttermilk Doughnuts

(courtesy Rosemary Bailey)

2 eggs
1 c. sugar
1/4 c. vegetable oil
1 t. vanilla
4 c. flour
4 t. baking powder
3/4 t. salt
1/4 t. baking soda
1 c. buttermilk
Cooking oil (for frying)
Powdered sugar

Beat eggs until thick and lemon colored. Add sugar and beat. Stir in oil and vanilla. Sift dry ingredients together and add alternately with the buttermilk. Roll out to 1/2" thickness on lightly floured board. Cut with doughnut cutter. Fry in deep hot oil (375° F) until golden brown, about three minutes. Drain on paper towels. Serve plain or sprinkled with powdered sugar.

Basic Pancakes

1 c. flour
1 T. sugar
2 1/2 t. baking powder
1/4 t. salt
1 egg
1 c. milk
2 T. vegetable oil

Combine dry ingredients in bowl. Combine wet ingredients together in separate bowl. Add liquid to the dry ingredients and stir until just moistened. Cook pancakes on preheated griddle, 1/4 cup batter per cake. Makes 8-10 pancakes.

Basic Waffles

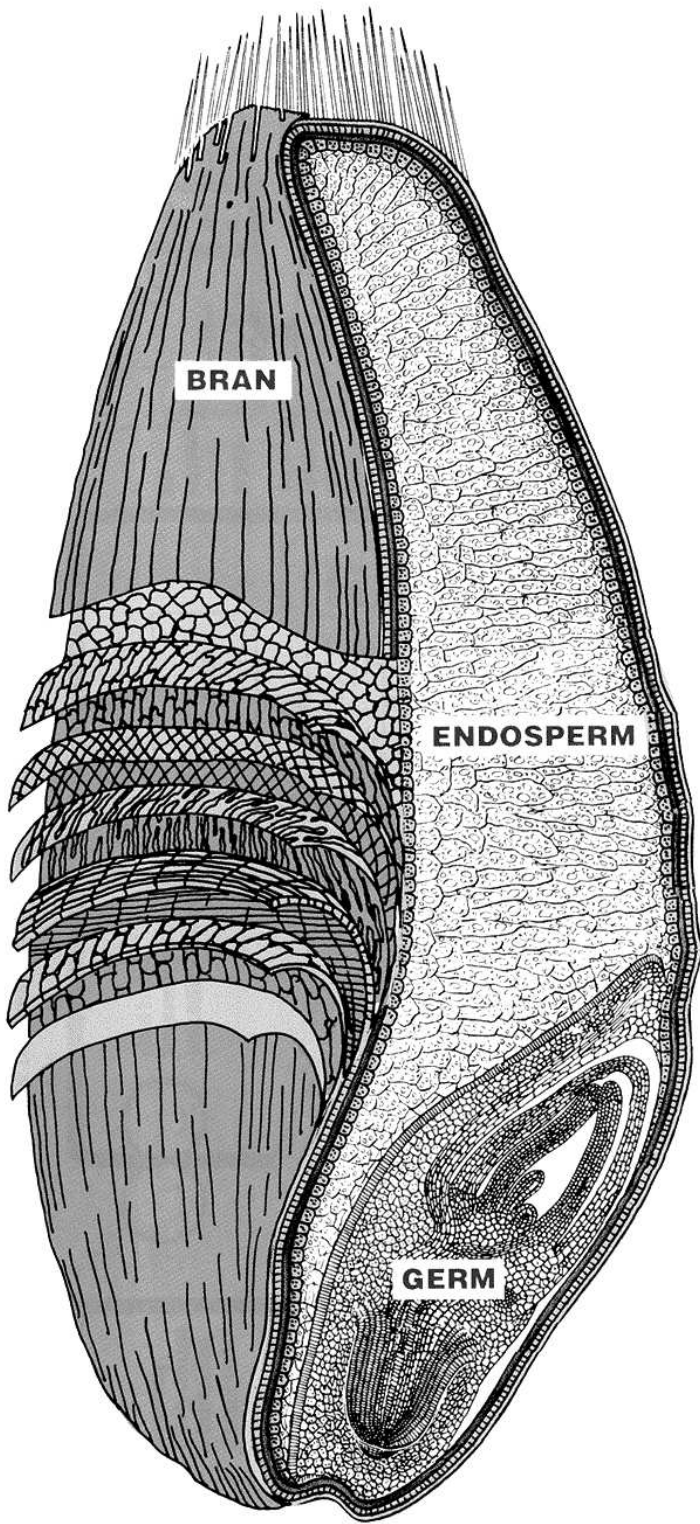
2 c. flour
4 t. baking powder
1/4 t. salt
2 eggs
1 3/4 c. milk
1/2 c. vegetable oil

In medium bowl, combine dry ingredients. In separate bowl combine wet ingredients. Mix wet and dry ingredients until just combined. Bake in preheated waffle iron according to manufacturer's instructions. Makes 6 waffles.

Recipes (except buttermilk doughnuts) courtesy of The Everything Quick Meals Cookbook, Barbara Doyen, 2001.

Nutritional value

One serving of fully cooked wheat kernels



Calories	42
Carbohydrates	10 g
Cholesterol	0 mg
Dietary Fiber	2 g
Fat (Total)	0 g
Potassium	50 mg
Protein	2 g
Sodium	0 mg
Selenium	50 mcg
Iron	0 g
Niacin	0 mg
Thiamin	0 mg
Riboflavin	1 mg
Folate	6 mcg

Calories from:

Carbohydrates	81%
Fat	4%

Bean and Legume Basics

- Great tasting and versatile.
 - Low in fat, cholesterol free, lean on calories.
 - High in protein—One cup of cooked beans provides 1/3 to 1/2 of the US recommended daily allowance of protein for adults.
 - High in fiber—One cup of beans supplies almost half of the recommended daily amount of fiber for adults.
 - They are a potent dose of soluble fiber, which has been scientifically proven to aid in lowering blood cholesterol levels.
 - A great source of Niacin, Thiamin, Riboflavin, and B6. All of these are necessary for normal growth and building body tissues.
 - Also a source of calcium, iron and potassium.
 - Beans and legumes have been shown to prevent spikes in blood sugar to aid management of diabetes.
 - Beans and legumes provide all of these nutritional benefits at about 10 cents per cup of cooked beans.
- (Source: Kim McClintic, MS, RD, LD. OSF Registered Dietician)

<u>Type</u>	<u>Some Common Uses</u>
White	Baked beans, Pork and Beans, soups, casseroles, with pasta
Black	Salads, Latin American dishes, soups, salsas, brownies
Red	Chili, refried beans, bean dip, jambalaya
Kidney	Soups, salads, chili, over rice
Pinto	Refried beans, burritos, tostadas, dips
Garbanzo (Chick Peas)	Salads, Hummus, Falafel, with pasta
Black-eyed peas	Soups, baked beans, over cornbread
Lentils	Soups, Dhal, with rice
Split Peas	Soup

Bean Math:

- 1 cup of dry beans = about 3 cups cooked
- 1 pound dry beans = 2 cups = 6 cups cooked
- 1 pound of dry beans will serve 6-8 adults for under \$1.00 when cooked.
- 1 serving of cooked beans = 1/2 to 3/4 cup

Taming the Bean Fiend

Do beans cause flatulence or tummy-aches? Probably not, if you do them right. Depends how prepare them and how often you eat them. See below for tips on how to make dry beans digestion-friendly.

Preparing and Eating Beans--Source (American Dry Bean Board):

Rinsing: Rinse beans thoroughly before soaking, and pick out pebbles and bits of dirt.

Soaking: Before cooking, soak dry-packaged beans to help soften and return moisture to the beans and reduce cooking time. Most beans will rehydrate to triple their dry size, so be sure to start with a large enough pot.

Preferred Hot Soak and Quick Soak Methods Hot soaking helps dissolve some of the gas-causing substances, making the beans easier to digest. For each pound beans, add 10 cups hot water; heat to boiling and let boil 2 to 3 minutes. Remove from heat, cover and set aside for at least one hour (Quick Soak), or up to 4 hours (Hot Soak).

Traditional Overnight Soak For each pound (2 cups) dry-packaged beans, add 10 cups cold water and let soak overnight, or at least 8 hours. The longer the soaking time, the greater the amounts of gas-causing properties that will dissolve in the water, thus helping in improve digestion of beans. Whether you soak the

For an hour or several hours, remember to discard the soak water.

Cooking

Crock Pot—Cook on low for 6-12 hours

Stove Top—Simmer beans about ½ to 2 hours, or until tender, adding additional water if necessary. To prevent skins from bursting, simmer gently and stir occasionally.

Pressure Cooker—Cooker should be no more than ½ filled to allow for expansion. Add enough water to cover beans and 1 Tablespoon of oil to reduce foaming. Cover. Cook at 10 lbs pressure (high pressure) about 20 minutes.

Spice up beans while they cook. Seasonings such as garlic, onion, oregano, parsley or thyme can be added to the pot while beans are cooking. Add acidic ingredients, such as tomatoes, vinegar, citrus juices, only at end of cooking, when the beans are tender.

Add salt only after beans are cooked to tender. If added before, salt may cause bean skins to become impermeable, halting the tenderizing process.

To test for doneness, bite-taste a few beans. They should be tender, but not overcooked. When cooling, keep beans in cooking liquid to prevent them from drying out.

Eating

Beans and legumes are easier for you to digest if you eat them regularly. The USDA recommends that Americans eat three cups of beans per week. If you haven't eaten beans in a while, start with smaller quantities eaten regularly and slowly add more into your diet.

Water Storage Guidelines

Commercially bottled water in PETE (or PET) plastic containers may be purchased. Follow the container's "best if used by" dates as a rotation guideline.

Avoid plastic containers that are not PETE plastic.

THE CHURCH OF
JESUS CHRIST
OF LATTER-DAY SAINTS

If you choose to package water yourself, consider the following guidelines:

Containers—

- Use only food-grade containers. Smaller containers made of PETE plastic or heavier plastic buckets or drums work well.
- Clean, sanitize, and thoroughly rinse all containers prior to use. A sanitizing solution can be prepared by adding 1 teaspoon (5 ml) of liquid household chlorine bleach (5 to 6% sodium hypochlorite) to one quart (1 liter) of water. Only household bleach without thickeners, scents, or additives should be used.
- Do not use plastic milk jugs, because they do not seal well and tend to become brittle over time.
- Do not use containers previously used to store non-food products.

Water Pretreatment—

- Water from a chlorinated municipal water supply does not need further treatment when stored in clean, food-grade containers.
- Non-chlorinated water should be treated with bleach. Add 1/8 of a teaspoon (8 drops) of liquid household chlorine bleach (5 to 6% sodium hypochlorite) for every gallon (4 liters) of water. Only household bleach without thickeners, scents, or additives should be used.

Storage—

- Containers should be emptied and refilled regularly.
- Store water only where potential leakage would not damage your home or apartment.
- Protect stored water from light and heat. Some containers may also require protection from freezing.
- The taste of stored water can be improved by pouring it back and forth between two containers before use.

Additional Information—Note: The following links are not to official Church publications but are provided as additional resource material:

www.fema.gov/plan/prepare/water

www.redcross.org/services/prepare