



By Alice Henneman and Jenny Rees, UNL Extension Educators

The following recipes have been created so they are suitable for someone with celiac disease or who is eating a gluten-free diet.

Sorghum Bread

This recipe was developed by Bette Hagman for Twin Valley Mills, LLC and is provided courtesy of Twin Valley Mills, LLC (www.twinvalleymills.com). Additional recipes using sorghum flour may be found in Bette's book, *The Gluten-Free Gourmet Bakes Bread*.



- 1 cup sorghum flour
- 2/3 cup tapioca flour
- 2/3 cup cornstarch
- 1-1/2 teaspoons xanthan gum
- 1/3 cup dry milk powder or nondairy substitute*
- 1/2 teaspoon salt
- 1 teaspoon unflavored gelatin
- 1 teaspoon baking powder
- 3 tablespoons sugar
- 2-1/4 teaspoons dry yeast granules
- 2 eggs
- 1/2 teaspoon dough enhancer or vinegar
- 3 tablespoons vegetable oil
- 1 cup lukewarm water (more or less)

- 1) Grease an 8-1/2" by 4-1/2" loaf pan and dust with rice flour.
- 2) Combine the dry ingredients in a medium bowl. (Jenny's note: I do not add xanthan gum here. I add it near the end of a 3-1/2 minute beating of all ingredients as my dough is too sticky to beat with the mixer if I add it here. Just remember to add it!)
- 3) In the mixing bowl of a heavy duty mixer, whisk the eggs, dough enhancer and oil. Add most of the water, holding back about 3 tablespoons to add as needed. Turn mixer to low and add the flour mixture a little at a time. The mixture should be the consistency of cake batter. Add the remaining water a little at a time to achieve this texture. Turn mixer to high and beat for 3-1/2 minutes. Spoon into the prepared pan, cover and let rise in a warm place about 35 minutes for rapid rising yeast; 60 or so minutes for regular yeast or until dough reaches the top of the pan.
- 4) Bake 50 to 55 minutes in a 400° F oven, covering after 10 minutes with aluminum foil. (Jenny's note: I bake in a 350° F oven for about 50 minutes or until done and do not cover with aluminum foil. The crust gets dark – not burnt – but rubbing it immediately with butter or margarine after it's done keeps the crust soft as Bette suggests below.)
- 5) Turn out immediately to cool. For a softer crust, rub immediately with butter or margarine. Cool before slicing.

(Jenny's note: Gluten-free breads need to be frozen if not eaten within a day to avoid microbial growth. Slice bread and store sliced loaf in a freezer bag in the freezer. A handy way to freeze the bread is to wrap serving size portions of bread – usually one or two slices – in plastic wrap or zip top sandwich bags and then place in a freezer bag. This makes it easy to remove a few slices at a time and if desired, carry them along with you if you cannot eat the bread offered somewhere away from home.)

*Bette states, "I used the adult drink powder Ensure as my nondairy substitute and it turned out very well. The extra flavor and vanilla in the powder made the best tasting bread."

Pancakes

This recipe was adapted by Mary Schluckebier, Home Economist, for Twin Valley Mills, LLC and is provided courtesy of Twin Valley Mills (www.twinvalleymills.com).



- 2 cups sorghum flour
- 3 teaspoons baking powder
- 1 teaspoon sugar
- 3/4 teaspoon salt
- 1/2 cup non-fat dry powdered milk (or powdered buttermilk)*
- 1 tablespoon corn oil
- 3 eggs
- 1-1/2 cups water

Combine dry ingredients. Stir in eggs, oil and water; mix well. Drop by spoonfuls onto a hot, 375° F griddle until golden brown, turning once. Makes about 20 4-inch pancakes. Hints: If you like thinner pancakes, add more water or add some applesauce.

*Mary states, "They are just fine leaving out the milk and not substituting anything in its place. It may mean adjusting the amount of water to provide the thickness of batter for thick or thin pancakes."

Gluten-Free Sorghum Recipes

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Celiac disease (CD) is triggered by ingesting certain proteins, commonly referred to as "gluten," which are naturally present in some cereal grains. While CD can't be cured, its symptoms can be controlled through diet.

One of the grains people with celiac disease can eat is flour processed from food sorghum varieties. According to Barbara Kliment, executive director of Nebraska Grain Sorghum Board, "Whole grain sorghum flour is a wholesome, hearty grain that provides important fiber and has a mild flavor that won't compete with the delicate flavors of other food ingredients."

CD is a genetic disorder and may occur in children as well as adults. Approximately one in 133 people may have CD; the majority of these individuals have not been diagnosed.

When someone with CD eats gluten, an autoimmune response that damages the small intestine is set off. In turn, the small intestine loses its ability to absorb the nutrients in food, leading to malnutrition and other complications. The symptoms vary widely among people. An extensive list of symptoms is given on the Celiac Sprue Association (CSA)

Web site at <http://csaceliacs.org>

Though gluten is commonly associated with wheat, foods made with barley and rye must also be avoided. The use of oats is questionable at this time. For a comprehensive list of all the grains and flours currently considered consistent, questionable or not consistent with a gluten-free diet, check on the CSA Web site at <http://csaceliacs.org>

In substituting sorghum flour for wheat flour in recipes, a combination of flours often is used. It is possible to purchase already-mixed all-purpose gluten-free baking flours. Or you can mix your own — following are three substitution possibilities which include sorghum flour.

Because sorghum does not contain gluten, a "binder" such as xanthan gum, must be added when gluten is needed to create a successful product. Add 1/2 teaspoon xanthan gum per cup of sorghum flour for cookies and cakes or one teaspoon per cup of flour for breads. Other ingredients used as binders in some recipes include egg whites, unflavored gelatin, cornstarch and guar gum.

Store sorghum flour in moisture-vapor-proof, air-tight glass or metal containers or plastic freezer bags. Keep in a cool, dry, dark place if it will be used within a few months; store in a refrigerator or freezer for longer storage.



Photo Courtesy of Nebraska Grain Sorghum Board

Cookie Mix (makes 2 cups)
by Mary Schluckebier

- 1/4 cup chickpea flour
- 1-3/4 cup sorghum flour
- 1/4 cup sweet rice flour

Source: CSA Web site at <http://csaceliacs.org>

Four Flour Bean General Baking Mix (makes 3 cups)
by Bette Hagman

- 2/3 cup garfava bean flour
- 1/3 cup sorghum flour
- 1 cup cornstarch
- 1 cup tapioca starch/flour

Source: CSA Web site at <http://csaceliacs.org>

Carol's Sorghum Blend

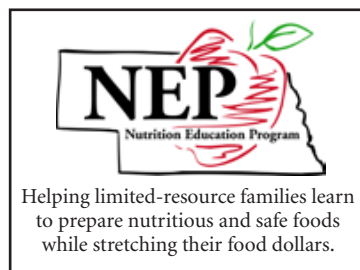
Reprinted with permission from 1,000 Gluten-Free Recipes by Carol Fenster, (Wiley, 2008)

- 1-1/2 cups sorghum flour
- 1-1/2 cups potato starch or cornstarch
- 1 cup tapioca flour

Whisk together and store, tightly covered, in a dark, dry place.

NOTE: If a recipe wasn't specifically developed to be gluten-free, additional adjustments beyond changing the types of flours may be needed. Learn more about gluten-free diets at the CSA Web site at <http://csaceliacs.org>

Eat a Variety of Vegetables



Helping limited-resource families learn to prepare nutritious and safe foods while stretching their food dollars.

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Everyone knows getting enough vegetables in your diet is good for your health, but how can you make it more interesting and nutritious? The key is **variety**. Vegetables themselves are separated into five subgroups according to nutrient content. The five subgroups are:

- dark green
- orange
- dry beans and peas
- starchy
- other vegetables

Getting a variety of vegetables from each subgroup weekly means you are also getting a variety of nutrients and phytochemicals.

Try new recipes that include several different types of vegetables, varying in texture and color. For example, add a mixture of vegetables like mushrooms, broccoli, green peppers and onions to an ordinary meat and cheese pizza. Think unconventional with your use of vegetables. Have you ever tried adding chopped or shredded carrots to marinara sauce? Add broccoli, asparagus and/or tomatoes to your scrambled eggs or omelet. There are several ways to incorporate new uses of vegetables in classic dishes, it just takes some creativity.

Be brave and try something new. When grocery shopping, make it an adventure to find a vegetable you haven't tried or look for new frozen vegetable combinations. At home prepare vegetables differently to experience different tastes, such as crunchy or steamed.

DARK GREEN

- Bok choy
- Broccoli
- Collard greens
- Dark green leafy lettuce
- Spinach

ORANGE

- Acorn squash
- Butternut squash
- Carrots
- Pumpkin
- Sweet potato

DRY BEANS AND PEAS

- Black beans
- Kidney beans
- Garbanzo beans (chickpeas)
- Lentils
- Pinto beans
- Split peas

STARCHY VEGETABLES

- Corn
- Green peas
- Potatoes

OTHER VEGETABLES

- Asparagus
- Beets
- Cabbage
- Celery
- Cucumbers
- Eggplant
- Green beans
- Green or red peppers
- Mushrooms
- Onions
- Tomatoes
- Vegetable juice
- Zucchini



More gluten-free sorghum recipes are on the extension web site at <http://lancaster.unl.edu/food/gluten-free-sorghum-recipes.shtml>