Cooking with Grains

In most countries of the world, grains and grain products—flour, bread, cereal and pasta—are the chief forms of sustenance. They provide about 50 percent of the world's calories and indirectly contribute much of the other half, since grains are also fed to the animals from which we get meat, eggs and dairy products.

Between 65 percent and 90 percent of the calories in grains come from carbohydrates (mostly complex). Grains are also rich in both soluble fiber (the kind that lowers blood-cholesterol levels) and insoluble (the kind that helps to prevent constipation and help protect against some forms of cancer). Moreover, grains—especially whole grains—and grain products offer significant amounts of B vitamins (riboflavin, thiamin and niacin), vitamin E, iron, zinc, calcium, selenium and magnesium.

All grains need to be cooked in a liquid to make them edible. Unlike pasta, which is cooked in large quantities of water, grains are cooked in just the amount of liquid necessary to soften and plump them. This also preserves the grains’ considerable B vitamin content, which would be lost to any excess cooking liquid.

What's in a grain?

Not all grains are botanically related—true grains, such as wheat, rice, oats, rye, millet, corn, triticale and barley, are members of the grass family, Gramineae; other so-called grains, such as amaranth, quinoa and buckwheat, belong to different botanical families. But the kernels of the different grains all have a similar composition.

**Kernel:** A kernel is an edible seed composed of three parts—the bran, the endosperm and the germ, or embryo. Some grains, notably rice, oats and some varieties of barley, are also covered by an inedible papery sheath called the hull, which must be removed before the grain can be processed or consumed. Within each kernel are the nutrients needed for the embryo to grow until the plant can take root and get nourishment from outside sources.

**Bran:** The bran is the outer covering of the kernel. It makes up only a small portion of the grain but consists of several layers—including the nutrient-rich aleurone—and contains a disproportionate share of nutrients. The bran layers supply 86 percent of the niacin, 43 percent of the riboflavin and 66 percent of all the minerals in the grain, as well as practically all of the grain’s dietary fiber. In some grains—wheat and corn, for example—the fiber is primarily insoluble, while in other grains, such as oats and barley, it is mainly soluble. Whole grains almost always contain the bran, but it is usually stripped away during milling and so is missing from most refined grain products.

**Endosperm:** The starchy endosperm accounts for about 83 percent of the grain’s weight. Most of the protein and carbohydrates are stored in the endosperm, as are some minerals and B vitamins (though less than are in the bran). This layer also has some dietary fiber; for example, about 25 percent of the fiber in wheat is found in the endosperm. In wheat, the endosperm is the part of the grain used to make white flour.

**Germ:** The smallest part of the grain is the germ; it constitutes about two percent of the kernel’s weight. Located at the base of the kernel, the germ is the part of the seed that if planted would sprout to form a new plant. It contains a good amount of polyunsaturated fat, and, as a consequence, is often removed during milling to prevent grain products from turning rancid. The germ is also relatively rich in vitamin E and the B vitamins—though it has fewer of the latter than are found in the bran or endosperm—and some minerals.

Cooking Grains

Here are some general guidelines for cooking grains: Place the appropriate amount (see chart) of water and/or broth in a saucepan; cover and bring to a boil over high heat. Add the grain (and ¼ teaspoon of salt, if desired) and return to a boil. Reduce to a simmer and cook, stirring occasionally, according to the method/times listed below. Toward the end of the cooking time, you may need to stir more frequently. This is especially true of the finer granulations, such as cornmeal, grits, oatmeal, teff, and bulgur. Note: The cooking methods, times, and yields for the grains in this chart are all based on ½ cup of uncooked grain.

- **Amaranth**
  - Liquid: 1 ½ cups
  - Method: Simmer, covered, for 30 minutes
  - Yield: 1 ½ cups

- **Barley, Hulled**
  - Liquid: 2 cups
  - Method: Simmer, covered, for 1 hour 40 minutes
  - Yield: 1 ¾ cups

- **Barley, Pearl**
  - Liquid: 1 ½ cups
  - Method: Simmer, covered, for 30–45 minutes
  - Yield: 2 cups

- **Barley, Quick-Cooking**
  - Liquid: 1 cup
  - Method: Simmer, covered, for 10–12 minutes. Let stand 5 minutes
  - Yield: 1 ½ cups

- **Barley, Grits**
  - Liquid: 2 cups
  - Method: Simmer, covered, for 20 minutes
  - Yield: 1 ¾ cups

- **Buckwheat, Whole Groats, Unroasted**
  - Liquid: 1 cup
  - Method: Simmer, covered, for 15 minutes
  - Yield: 1 ¾ cups

- **Buckwheat, Whole Groats, Roasted**
  - Liquid: 1 cup
  - Method: Simmer, covered, for 13 minutes
  - Yield: 1 ½ cups
OATS, STEEL-CUT
LIQUID: 2 cups
METHOD: Simmer, uncovered, for 40–45 minutes
YIELD: 1½ cups

OATS, ROLLED
LIQUID: 1 cup
METHOD: Simmer, uncovered, for 5 minutes
YIELD: 1 cup

OATS, QUICK-COOKING
LIQUID: 1 cup
METHOD: Simmer, uncovered, for 1 minute. Let stand for 3–5 minutes
YIELD: 1 cup

QUINOA
LIQUID: 1 cup
METHOD: Rinse the quinoa well. Simmer uncovered, for 15 minutes
YIELD: 2 cups

RICE, BROWN, LONG-GRAIN
LIQUID: 1 cup
METHOD: Simmer, covered, for 25–30 minutes
YIELD: 1½ cups

RICE, BROWN, SHORT-GRAIN
LIQUID: 1 cup
METHOD: Simmer, covered, for 40 minutes
YIELD: 1½ cups

RICE, WHITE, LONG-GRAIN
LIQUID: 1 cup
METHOD: Simmer, covered, for 20 minutes
YIELD: 1¾ cups

KASHA
LIQUID: 1 cup
METHOD: Simmer, covered, for 12 minutes
YIELD: 2 cups

CORNMEAL
LIQUID: See method
METHOD: Whisk ¼ cup cold water into cornmeal. Stir mixture into 1½ cups boiling water. Cook, stirring, for 10 minutes
YIELD: 2 cups

HOMINY, WHOLE DRIED
LIQUID: Soak for 8 hours
METHOD: Drain and simmer, covered, in 3 cups of water for 2½ to 3 hours
YIELD: 1½ cups
HOMINY Grits, Coarse
Liquid: 2 1/2 cups
Method: Simmer, uncovered, for 30 minutes
Yield: 1 3/4 cups

FARRO/SPELT
Liquid: 2 cups
Method: Simmer, covered, for 1 hour
Yield: 1 3/4 cups

KAMUT
Liquid: 1 1/2 cups
Method: Simmer, covered, for 1 hour 10 minutes
Yield: 1 3/4 cups

Millet
Liquid: 1 1/2 cups
Method: Simmer, covered, for 25 minutes. Let stand for 10 minutes
Yield: 2 1/2 cups

RICE, WHITE, SHORT-GRAIN
Liquid: 1 1/2 cups
Method: Simmer, covered, for 20 minutes
Yield: 1 3/4 cups

RICE, WHITE, BASMATI
Liquid: 1 cup
Method: Simmer, covered, for 15-18 minutes
Yield: 2 cups

RICE, WHITE, JASMINE
Liquid: 1 cup
Method: Simmer, covered, for 18 minutes
Yield: 1 3/4 cups

RYE BERRIES
Liquid: 1 1/2 cups
Method: Simmer, covered, for 2 hours
Yield: 1 3/4 cups

TEFF
Liquid: 1 1/2 cups
Method: Simmer, covered, for 15 minutes
Yield: 1 1/2 cups

TRITICALE BERRIES
Liquid: 1 1/2 cups
Method: Simmer, covered, for 1 hour 10 minutes
Yield: 1 3/4 cups

WHEAT BERRIES
Liquid: 1 1/2 cups
Method: Simmer, covered, for 1 hour 10 minutes
Yield: 1 3/4 cups
CRACKED WHEAT
LIQUID: 1 cup
METHOD: Simmer, covered, for 15 minutes
YIELD: 1 cup

BULGUR
LIQUID: 1 cup
METHOD: Simmer, covered, for 15 minutes
YIELD: 1½ cups

WILD RICE
LIQUID: 2 cups
METHOD: Simmer, covered, for 45–50 minutes
YIELD: 2 cups

Source: The Wellness Kitchen, by the staff of The Wellness Kitchen and the editors of the University of California, Berkeley Wellness Letter.