

whole

GRAINS

A GUIDE TO GRAINS FROM AMARANTH TO WILD RICE



Did You Know?

Grains are the seed-bearing fruits of grasses. An inedible husk is the outermost layer of the grain. When this is removed, the resulting product is sometimes called groats or berries. The next layer of a grain is the bran, a protective coating. This layer is rich in fiber. When this layer is removed, the product may be described as pearly or polished. Inside the bran is the endosperm (the starchy part of a grain) and the germ, the part of the grain which is highest in nutrients. When grains are refined, the husk, bran, and germ are removed leaving only the endosperm. Technically speaking, buckwheat, quinoa, and amaranth are fruits, not grains, but they are generally included with the grain group.

✧ Introduction ✧

Numerous studies have linked whole grains with prevention from heart disease, diabetes, cancer, and obesity. Whole grains are important contributors to good health. They contain many valuable nutrients which are not found in refined grains. They are also fat-free and cholesterol-free, making them a healthy choice. A whole grain is essentially a grain which has been hulled but not further processed.

They can either be cracked as grits, coarsely ground as meal, or finely ground as flour. The most nutrients are found in parts of the grain such as the bran and germ, which remain intact in whole grains. When grains are combined with vegetables, legumes, nuts, or seeds, the vitamin and protein content is improved. There are

endless possibilities when using whole grains in cooking. Whole grains are low in fat and sodium, yet contribute dietary fibres, minerals, and vitamins to the diet. The nutritional value of whole grains can even be improved by sprouting them. They can also easily be cooked or added to bread dough.

More common grains include wheat, rye, corn, oats, rice, and wild rice. Ancient whole grains, which contain high

amounts of amino acids, include amaranth, quinoa, kamut, teff, and spelt. These grains have a long history of use by other cultures. Other grains such as millet, barley, and buckwheat are very valuable grains as well, and are being recognized for their nutritional value and versatility.



GRAINS

Amaranth / Barley / Buckwheat

AMARANTH

Amaranth is a grain common to Mexico, Central and South America, China, India, and Africa. This ancient grain was a staple food of the Aztec people, and is very versatile and nutritious. It can be milled, popped, made into flour, or combined with other grains to boost their nutritional value. Amaranth is higher in protein than most grains, and contains up to 18% protein. It is also a good source of fibre and the amino acid lysine. When cooked, it has a mild, sweet, nutty flavour and can be added to many recipes. Amaranth is an ideal food for celiacs. The flour can be easily combined with tapioca or arrowroot flours (roughly half and half) to create a gluten-free replacement for making baked goods. To cook amaranth, boil 1 cup of the grain in 2-1/2 cups water or stock. Cook for 18-20 minutes, or until amaranth is tender. Overcooking can cause the amaranth to become sticky.

Available as a flour or grain.

BARLEY

Barley is a versatile grain which comes in many forms. It is one of the oldest and most easily digestible grains. It is a good source of protein, potassium, and trace minerals. Pot Barley, or Scotch Barley, only has its hull removed and can be used in soups and stews. It requires about a half hour of simmering to soften the grain. Pearl Barley has the hull, bran, and most of the germ removed. This is a more refined type of barley. Barley Grits, or Cracked Barley, are good as a hot breakfast cereal. For baking, barley comes in flour form although it is best to combine it with lighter flours because it is quite heavy. Barley grains can be added to many dishes to add nutrition and substance. To cook, use two parts liquid to one part grain and cook for half an hour.

Available as Pot Barley, Pearl Barley, Barley Flakes, Barley Flour or Barley Groats.

BUCKWHEAT

Buckwheat is not a true cereal grain and is good for those allergic to more common grains such as corn or wheat. This grain contains almost as much protein as eggs, but without the cholesterol. It is also rich in potassium and B vitamins. Hulled buckwheat groats can be cracked coarsely or finely and can be toasted or untoasted. Coarse buckwheat has a nutty texture. Buckwheat kasha is a toasted, more flavourful version of the grain. In general, buckwheat groats are soft and quick-cooking. Buckwheat flour is heavy and should be combined with other flours for baking, although it can be used on its own to thicken soups, sauces or gravy. To cook buckwheat, use two parts water to one part grain, and cook for about 5 minutes.

Available as Buckwheat Flour (Dark or Light Stoneground) Buckwheat Kasha, Buckwheat Groats or as Buckwheat Grits.

Did You Know?

When you go to buy grains, it will be helpful to know a few commonly used terms. Steel-cut or cracked grains have been cut into smaller pieces so they cook faster. Grain flakes or rolled grains are steamed and then flattened be-

tween rollers. A grain meal has been ground to a gritty consistency. Grits have been steamed and soaked, have had both hulls and germs removed, and have been cut using rollers

GRAINS

Bulgur / Corn / Kamut

BULGUR

Bulgur is the wheat grain which has been parboiled, dried, partially de-branned and then cracked either coarsely or finely. Despite this processing, the endosperm and most vitamins and minerals remain intact. Coarse bulgur has more texture and a nuttier flavour. This grain is versatile and quick cooking. Alternately, bulgur can be softened just by soaking in liquid. Bulgur can be cooked as a cereal, or added to bread dough, baked goods, soups, stews, casseroles, desserts or used as a rice substitute. Bulgur is commonly made into a lemon-parsley salad, Tabouli. To cook Bulgur, use two parts water to one part grain and cook for about 10 minutes.

CORN

Corn is a versatile grain which contains no cholesterol and is high in polyunsaturates. White, yellow, or blue corn meal can be made into many baked goods such as corn bread, pancakes, cooked cereal, polenta, tacos, and tortillas. Hominy grits, or coarse-ground corn grits, consist of the corn endosperm. A simple cereal can be made out of this. Corn flour, finely ground, is good for thickening sauces. Corn germ is a good source of B vitamins, minerals, and iron. It is more stable than wheat germ and can be added to baked goods, cereals, and stuffing. To cook a cornmeal cereal, use 1 cup of cornmeal, 4 cups of water, and 1 tsp. of salt. Mix the cornmeal with 1 cup of water in a bowl and let it sit. Boil the other 3 cups of water with the salt, then add the moistened cornmeal. Stir and let simmer, stirring frequently, for 5 minutes. Serve with sweeteners such as brown sugar or honey. Available as corn flour, corn bran, hominy grits (white corn), corn meal, or popcorn.

KAMUT

Kamut is an ancient ancestor of wheat, originally grown in Egypt. It has as many uses as common wheat, from pasta to flour. Kamut contains 20-40% more protein than wheat, is higher in minerals such as magnesium and zinc, and has up to 65% more amino acids. Some people who are allergic to gluten have been able to tolerate Kamut, although this grain does contain gluten and should be used with discretion. Kamut can be used in baking or cereals and is a popular ancient grain. To cook Kamut Flakes, combine 1 cup flakes with 2 cups water, bring to a boil, then let simmer for 15-18 minutes. Remove from heat, stir through, and add milk or sweetener if desired.

Available as Kamut flakes, flour or kernels.

Did You Know?

In a hurry? You may think it's just too much work to cook grains. This is not necessarily true. While some grains do require long cooking, this can be reduced by soaking overnight or pressure cooking. Additionally, grains can be cooked in a crock pot and do not require any attention while they are cooking. Quick-cooking grains, which require less than 30 minutes to prepare, include quick brown rice, couscous, quinoa, buckwheat kasha, teff, and bulgur.

GRAINS

Millet / Oats / Quinoa

MILLET

As one of the most ancient grains, millet has been a staple in India, Africa, Northern China and the Middle East. It is a common food for not only humans, as it is often as animal feed. It is a nutritious grain, containing protein, vitamin B, iron, magnesium, and potassium. Although the grains vary in size and shape, most are tiny, round, and whitish-cream coloured. Millet can be used as a rice substitute or as a cooked breakfast cereal. Being quite bland, millet is a good addition to soups or stews as it absorbs flavour. It is also good in bread dough and baked goods. Millet comes in whole, cracked, or ground form. Millet meal can be made into a fine-textured hot cereal or used as a thickener for sauces. To cook, use two parts liquid to one part grain and cook for about 10 minutes.

Available as Millet flour, meal or hulled.

OATS

Oats are a valuable, nutritious grain with many uses. They are higher in protein than most whole grains, and are a good source of vitamin B and soluble fiber which lowers cholesterol levels and stabilizes blood sugar levels. Rolled oats and thinner-cut quick oats are good for cooked oatmeal or baking. Steel cut oat groats, also known as Scotch oats or Irish oats, are the healthiest option as the most nutrients and flavour are retained. Oat flour is light in texture and colour, and is a good addition to baked products. Oats have a nutty flavour and texture, and cook in about 15 minutes using two parts liquid to one part grain.

Available as large or quick flakes, Scotch oatmeal, oat flour, oat bran, oat groats (whole, hulled, or steelcut).

QUINOA

Quinoa is an ancient grain native to Central America, and was used by the Inca people. It is also known as “Inca wheat” and was a culturally significant grain, along with Amaranth, until they were replaced with modern foods by settlers. Quinoa is a good source of protein and amino acids, especially when combined with other grains such as corn. In fact, quinoa is higher in protein (at 16%) than corn, barley, rice, and wheat. It is also a good source of calcium, iron, phosphorus, vitamins B and E, essential fatty acids, complex carbohydrates, dietary fibres, and amino acids such as lysine. The small, disc-shaped, pale yellow grains can be cooked as a cereal or ground into flour for baking. It has a nutty flavour and crunchy texture which is similar to cous cous. To cook, use two parts liquid to one part grain, and cook for about 15 minutes. The small grains will expand to 3 or 4 times their original size. Available as Quinoa flour, grain, or lakes.

Did You Know?

All grains are low in fat and contain no cholesterol. They are low in sodium unless salt is added in cooking. They typically have between 5 and 10 grams of protein per cup.

Grains such as amaranth, quinoa, barley, triticale, and bulgur are excellent sources of fiber, riboflavin, vitamin B-6, zinc, copper, and iron..

GRAINS

Rice / Rye

RICE

Rice is a popular grain which can be used in many dishes. Combined with legumes, rice makes a complete protein and can be added to soups, stuffing, or stew. Rice is gluten-free and is good for those sensitive to other grains or with food allergies, as it is non-allergenic. It is also cholesterol free, and low in sodium and fat. It is a good source of B-complex vitamins and iron. Rice will triple in volume when cooked. Long-grain rice, when cooked, becomes light, fluffy, and dry. The grains separate easily and are very versatile. Medium-grain rice tends to absorb more liquid. Short-grain rice is smaller and nearly round. It absorbs the most liquid, and the grains stick together when cooked. This rice is best used in sushi and other Japanese foods. Basmati rice is an aromatic, nutty rice which adds flavour to any dish. White and brown rice differ in the nutrition content. Brown rice has close to twice the amount of potassium and zinc, 3 times more phosphorus and folacin, 6 times

more magnesium and over 3 times as much fibre as white rice. White rice is more processed and contains less protein and nutrients. Rice flour makes a good thickening agent for sauces, and can replace cornstarch or potato flour. Rice polishings are the outer coverings which are removed by milling. They are a rich source of B vitamins, and can be added to baking or cereal. White rice will cook in about 15-20 minutes. Brown rice is often hard to cook, but can easily be cooked using the following method. Use two parts liquid to one part water and soak the rice 4 to 8 hours before cooking. Then, cook for 40-50 minutes. Or use a rice cooker which cooks brown and white rice perfectly.

Available as Brown rice flakes, sweet rice flour, white rice flour, rice bran, rice polishings, brown rice flour, basmati rice (white or brown), black japonica rice, long grain rice, multi rice blends, short grain rice, sweet brown rice, or other rice blends.

RYE

Rye is the hardest of the cereal grains and is commonly used in breads. Rye grits are coarse, and rye flour is finer and good for baking. Because rye contains some gluten, the flour is sticky and heavy, so it is best to blend it with other flours when baking. The colour of the flour varies, depending on the variety of the grain and the amount of fibre in the flour. Whole rye grains can be sprouted, cooked, or soaked and added to bread dough. They can also be cracked and made into porridge. Rye flakes can be used like wheat flakes or added to granola-type cereals. To cook, use two parts liquid to one part grain, and cook for about 15 minutes.

Available as Rye kernels, grits, flakes, or flour (dark or light).

Did You Know?

Grains tend to store well in airtight containers, in a cool dry place. In the case of wheat germ and cracked or ground wheat, freezing or refrigerating is recommended if they will not be used right away.

GRAINS

Sorghum / Spelt

SORGHUM

Sorghum is a grass grain which originated in Africa and is the fifth most important cereal grain grown today. It is one of the oldest known grains, and continues to be an important food staple in Africa and India. Sorghum flour can be used in breads and baked goods such as cookies or muffins. Sorghum is gluten-free and is a useful substitute for other grains such as wheat. When baking with sorghum flour, a binder such as Xanthan Gum or Cornstarch is necessary, as there is no gluten present.

Available as Sorghum flour or grain.

SPELT

Spelt, like Kamut, is an ancient wheat which can be used like other whole grains. It is often made into pastas, flours, cereals, and flakes. It can completely replace wheat flour in baking recipes, although it combines well with other flours. For example, it can be blended with barley flour to make banana or zucchini bread. It can also be mixed with corn meal to make corn bread and can be used on its own to make pie crusts. Spelt is a good source of complex carbohydrates, vitamins A and B, and minerals such as iron, potassium, and amino acids. Its protein content varies from 13-19%, which is about 30% higher than wheat. Spelt is also higher in minerals than wheat and is a good source of fibre, which can help to lower cholesterol levels. Spelt does contain gluten, although, like Kamut, some gluten-sensitive people have been able to tolerate it. For those allergic to gluten, Spelt should be avoided or used with caution. To cook Spelt Kernels, soak grain in water for

eight hours or overnight. Drain, rinse and then add three parts water to each one part spelt. Bring to a boil, then turn down the heat and simmer for about one hour. To cook Spelt Flakes combine 1 part flakes with 3 parts water. Bring to a boil, reduce heat, and let simmer for 20 minutes or until tender. Stir and add milk or sweetener if desired.

Available as Spelt flakes, kernels, or flour.

Did You Know?

Gluten is a component of many grains and contains a protein known as alpha-gliadin.

The four primary grains containing gluten are wheat, oats, rye and barley. Buckwheat is not a grain and does not contain gluten. Oats,

Spelt and Kamut may be acceptable in moderate quantities to some gluten sensitive individuals. Some herbs contain gluten, such as psyllium, but the amount does not usually aggravate sensitivities.

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Teff / Triticale / Wild Rice

TEFF

Teff is an important, nutritious African cereal grass, which has been used for thousands of years. Teff is said to contain more than three times as much calcium as oats or hard wheat, and two to three times as much iron as wheat or barley. The protein content of teff is around 12%. It also contains high levels of potassium and zinc. Teff is an important addition to whole grain cooking. Traditionally, teff flour is used to make injera, an African flat bread which can be eaten with meats, stews or legumes. To cook teff grain, place 2 cups water, 1/2 cup teff, and 1/4 tsp. sea salt in a saucepan. Bring to a boil, reduce heat and simmer covered for 15 to 20 minutes or until the water is absorbed. Remove from heat and let stand covered for 5 minutes.

Available as Teff flour or grain.

TRITICALE

Triticale is a man-made grain, which is a combination of wheat and rye grains. It is grown as a cereal crop and can be made into flakes or flour. Triticale has a high nutritional value, with 15-17% more protein than wheat or rye. It has a good balance of amino acids including lysine, a low carbohydrate and fat content, and also contains more thiamine, riboflavin, calcium, and iron than wheat or rye. Triticale products can be used similarly to soft wheat, or can completely replace wheat in bread and baking. Products made with triticale resemble those made with wheat in their flavour, texture, and colour. The grains can be sprouted or used as a meal or flakes for cooked cereal. The flour can be used in pancake mix or baked goods. Triticale kernels and flakes can be cooked similar to wheat or rye.

Available as Triticale flakes, flour or kernels.

WILD RICE

Wild rice is often mistaken for regular rice, but in fact it is unrelated to the commonly-used, cultivated rice and is actually the seed of a wild, shallow-water grass plant. It has a nutty flavour and is delicious on its own, mixed together with white rice, or added to soups, stews, or casseroles. Wild rice can be paddy-grown or lake grown and hand-harvested. There is a difference in quality, taste, and cost depending on how the rice is grown and harvested. Before cooking Wild Rice, always rinse the grains thoroughly with water. Using one part grain to three parts liquid, cook the rice for about 45 minutes after bringing to a boil. This will make about four cups of wild rice. If overcooked, the rice will become mushy.

Did You Know?

Mixing grains adds flavour and nutrition to meals. Cereal flake mixes are packaged with a variety of grains including: wheat, triticale, rye, barley, oat, spelt, millete, flax, and kamut.

GRAINS

Wheat

WHEAT

Wheat is a versatile grain, of which there are three varieties: Einkorn, the oldest, Emmer, which is used for pasta, and Bread wheat. Wheat grains, kernels, or berries can be sprouted, cooked, or soaked and added to bread dough. Sprouting improves the food value by increasing lysine and tryptophan, two essential amino acids. The sprouting process also produces vitamin C in the grain. Cracked wheat is the whole grain which has been coarsely steel-cut. Hot cereal can be made using two parts liquid to one part wheat and cooking for about 15 minutes. Wheat grits are similar, but finer cut and faster cooking. Whole wheat grains can be classified into two types, hard and soft. Hard red spring or winter wheat is higher in gluten and is sold as bread flour or durum for pasta. Soft winter wheat is used for pastry flour and baking. Semolina is made from durum wheat and can be used for hot cereal, pudding, or polenta. Couscous is tiny, pearl white semolina, which is fast cooking and

can be made into hot cereal, used in broth, or used as a rice substitute with meat or vegetables. Graham flour is a light-brown coloured wheat flour which contains more bran than wheat flour. Wheat germ is a valuable, highly perishable part of the grain, which is concentrated in nutrients. It is found in whole wheat flour but is removed from milled white flour. It is a good source of protein, fat, calcium, phosphorus, iron, and vitamins B and E. The germ is the embryo of the wheat kernel, and contains about 10% oil. A stabilization process of the wheat germ is done to extend its shelf life. Wheat gluten is good for baking and is used to strengthen dough. Wheat bran is very effective in preventing constipation.

To cook cracked wheat, simmer 1 part cracked wheat per 2 parts salted water for about 40 minutes. To cook Couscous, use 1-1/4 cups of water or broth, 1 tbsp butter (opt.), 1 cup couscous, and salt to taste. Bring the water or broth to a boil. Add the butter, couscous and salt. Stir, cover and remove from heat. Allow to stand

covered for five minutes. Stir to fluff and serve. To cook wheat kernels, use 1 cup kernels to 2 cups water. Place all ingredients into a pressure cooker and cook on high heat until hissing begins and pressure rises. Lower heat to maintain hissing and cook for 45 minutes.

Available as durum semolina, wheatlets, graham flour, wheat germ, pastry flour, wheat flakes, hard spring wheat kernels, wheat bran, cracked wheat, couscous, flour (stoneground, pastry, white, wholewheat, unbleached).

Did You Know?

Substituting Wheat Flour.

Other flours can be substituted for wheat flour in baking. Replace one cup of wheat flour with:

> an equal amount of barley, rye or corn flour

> 5/8 cup of potato flour

> 3/4 cup of rice flour.

> 1-1/2 cups of oat flour.

Wheat-free products need to be baked longer and at a lower temperature than wheat products.