



THE RD-APPROVED GUIDE

to U.S.-Grown Rice

Rice is a grain that comes from the seed of a semi-aquatic grass known as *Oryza sativa* that thrives in warm and sub-tropical climates. It is cultivated differently than other grains as it requires controlled flooding and draining of the land. Rice is the primary dietary staple for more than half the world's population and is the most popular grain globally supplying energy, carbohydrates, protein, fiber, essential vitamins and minerals, and beneficial antioxidants.

THERE ARE OVER 120,000 VARIETIES OF RICE WORLDWIDE...

and they are categorized by degree of milling, kernel size, starch content, and flavor. For degree of milling, rice can be classified as rough or paddy rice, which is rice as it is harvested in the husk, whole grain (brown) rice with the husk removed, or white rice with the bran layer removed. Flavor profiles of rice range from a popcorn flavor with subtle floral or toasted nuts to sweet spiciness or sweet nuttiness. These flavors are presented through the aromatic rice varieties of jasmine, basmati, black, and red rice. There are multiple forms of rice for the consumer including regular milled rice, parboiled, precooked instant rice, individually quick-frozen (IQF) rice, ready-to-serve, and seasoned rice mixes.

THE BASIC METHODS FOR COOKING RICE...

are simmering and steaming, pilaf, boiling, and risotto. For cooking rice, the general rule of thumb is two parts liquid to one part rice, but it's important to note that different varieties require slightly less or slightly more liquid and/or cooking time and the consumer should always check package instructions for best results.

RICE IN THE USA

The U.S. rice industry is unique in its ability to produce all types of rice

and is recognized as an innovative, technologically-advanced, conservation-friendly, and dependable supplier of high-quality rice, both here and around the world.

Nearly 85% of all the rice consumed in the United States is grown by American rice farmers. Every year local farmers grow and harvest over 18 billion pounds of rice for domestic and international consumption.

U.S. rice is primarily grown in six states: Arkansas, California, Louisiana, Mississippi, Missouri, and Texas. Arkansas ranks as the number one rice-producing state, accounting for nearly 50 percent of total U.S. rice acreage, growing long and medium grain. California ranks as the second largest rice-producing state growing mostly short, medium grain, and specialty varieties.

RICE & NUTRITION

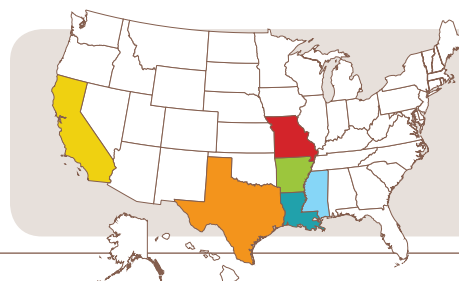
Rice is the least allergenic of all grains and is naturally sodium-free, cholesterol-free, gluten-free, GMO free, and sugar free. It contains no saturated or Trans fats and is only 100 calories per serving. Starch makes up most of a rice kernel, at 80 percent and is composed of two

types of starch molecules: amylose which makes rice firm and fluffy, and amylopectin, which makes rice soft and sticky. Longer grains typically have more amylose starch.

Rice is nutrient-dense and contributes over 15 vitamins and minerals, including folic acid, other B-vitamins, iron and zinc. Rice is comprised of complex carbohydrates that are more slowly digested than simple sugars, allowing the body to maintain more consistent long-term energy levels. Additionally, rice consumption triggers the neurotransmitter serotonin in the brain that helps regulate appetite and improve mood.

Research indicates frequent rice consumers have diets consistent with the U.S. Dietary Guidelines and have reduced risks for being overweight or obese, having high blood pressure and metabolic syndrome. Additional research shows brown rice (whole grain) helps reduce risks of chronic disease and certain cancers and plays a role in weight management. Enriched and whole grain foods are among the food groups that form the basis of a healthy diet. Due to the health benefits of the mighty grain, rice fits many healthy eating patterns including those recommended by the U.S. Dietary Guidelines for Americans and USDA's MyPlate, as well as gluten-free, diabetic-friendly, vegetarian, and vegan diets.

Discover more about the benefits of all rice varieties on the next page!



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THE RD-APPROVED GUIDE

to U.S. - Grown Rice

U.S. SHORT GRAIN

Physical: Opaque, short, plump, almost-round kernel. Kernels are 4-5mm long.

Cooking: Cooked grains are soft and stickier than other varieties with a slight springiness to the bite.

Application: Ideal for dishes with creamy consistency, sweet, and Asian dishes.

Nutrition: Short grain brown rice provides more dietary fiber than medium and long grain brown rice.

Growing Areas: Arkansas and California.

Fact: There are many varieties of short grain rice, including Koshihikari, Calmochi and Akitakomachi.



U.S. MEDIUM GRAIN

Physical: Two to three times longer than its width, making it a shorter, wider kernel than long grain rice. Kernels are 5-6mm long.

Cooking: Cooked grains are moist and tender, with a tendency to cling together.

Application: Ideal for dishes with a creamy consistency like paella or risotto, as well as Asian dishes. Often found in cereals, confections, and snacks.

Nutrition: Medium grain brown rice has more dietary fiber and a lower glycemic index than white medium grains. Medium grain rice contains more amylopectin or sticky starch.

Growing Areas: Arkansas, California, Louisiana, Missouri, and Texas.

Fact: 95% of sushi rice is grown in California. Southern grown medium grain rice is larger and not as soft or sticky as the California grown variety.



U.S. LONG GRAIN

Physical: Long, slender kernel, three to four times longer than its width. Kernel is 6-8mm long.

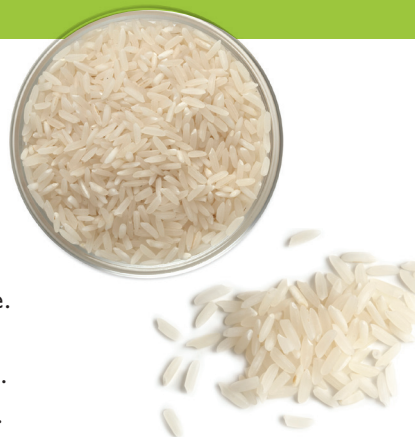
Cooking: Cooked grains are lighter, fluffier and more separated than their medium or short grain counterparts.

Application: Works well in pilafs, stir-fry, salad, soup and southern favorites.

Nutrition: Long grain brown rice contains two different isoflavones, Daidzein and Genistein, and also contains more potassium and phosphorus than long grain white rice. Long grain white rice has a firmer and fluffier texture due to its higher amylose content.

Growing Areas: Arkansas, California, Florida, Louisiana, Mississippi, Missouri, and Texas.

Fact: Long grain rice accounts for more than 70% of the rice grown in the United States.



U.S. PARBOILED (CONVERTED)

Physical: Translucent and amber in color. The raw rice has a golden sheen that turns to snow white after cooking.

Cooking: Fluffy and separate rice when cooked, but firmer texture than conventional cooked rice. Due to parboiling process, parboiled rice absorbs more water resulting in more plate coverage.



THE RD-APPROVED GUIDE

to U.S. - Grown Rice

U.S. PARBOILED (CONVERTED) CONT...

Application: Excellent for foodservice due to its ability to hold well on steam tables for longer periods of time than regular rice and used in frozen products and dry soup mixes.

Nutrition: Parboiling increases B vitamin content and increases oil content of bran. Retains more nutrients than regular milled rice through parboiling process in which nutrients stick to the endosperm.

Growing Areas: Arkansas, California, Louisiana, Mississippi, Missouri, and Texas.

Fact: Parboiled rice is rough rice that has gone through a steam-pressure process before milling. This procedure gelatinizes the starch within the kernel, resulting in firmer, more separate grains when cooked.



U.S. ARBORIO

Physical: Medium grain rice variety, has a characteristic white dot at the center of the grain.

Cooking: Develops a creamy texture and has an exceptional ability to absorb flavors, excellent for desserts.

Application: Primarily used in risotto along with other Italian dishes.

Nutrition: Higher in protein than other medium grain rice varieties. Contains a high percentage of amylopectin, a starch, which contributes to its characteristic creamy texture.

Growing Areas: Arkansas, California, Louisiana, Missouri, and Texas.

Fact: Stirring rice causes the starch in rice kernels to be released, resulting in a sticky rice. This is what gives risotto its natural creaminess.



U.S. WILD RICE

Physical: Long, slender, dark brown kernel. Grains range from 1/2 to 3 or more inches long.

Cooking: Cooked grains have a cream colored interior with a nutty flavor and chewy texture.

Application: Ideal for stuffing, salads, and soups, or for adding color and texture to breads and desserts.

Nutrition: High in protein, low in fat and sodium, and a good source of fiber. Rich in Thiamin, Lysine, Riboflavin, Vitamin B, and Iron.

Growing Areas: California, Oregon, Idaho, Minnesota, and Wisconsin.

Fact: Wild rice is not technically a rice, but is a semi-aquatic grass native to North America.



U.S. SWEET RICE

Physical: Chalky white, opaque kernel, short and plump grains. Predominantly a short grain variety, but also available in long grain.

Cooking: Cooked grains stick together due to their glutinous consistency.

Application: Commonly found in Japanese or Thai dishes, sweet or savory dishes, and can be used as a thickener in soup, sauce, gravy, and pudding.

Nutrition: High percentage of amylopectin and low percentage of amylose.

Growing Areas: California.

Fact: Sweet Rice is sometimes referred to as sticky rice or glutinous rice due to its sticky consistency once cooked.





THE RD-APPROVED GUIDE

to U.S. - Grown Rice

U.S. AROMATIC RICE

U.S. JASMINE

Physical: Long grain variety, aromatic. 3:1 length to width ratio.

Cooking: Cooked grains are soft, moist, and cling together.

Application: Major ingredient in many Thai recipes, ideal for dishes made for dry mixes.

Nutrition: Unlike other long grain rice, Jasmine rice has more amylopectin than amylose starch.

Growing Areas: Arkansas, California, Louisiana, Missouri, and Texas.

Fact: The aroma of Jasmine rice and other aromatic varieties is attributed to a much higher proportion of 2-acetyl-1-pyrroline, a naturally occurring compound in all rice.



U.S. BASMATI

Physical: Long grain variety, aromatic. 3:1-4:1 length to width ratio.

Cooking: Cooked grains are long, separate and fluffy; have a savory, nutty flavor and are slightly chewy. In cooking, grains become longer, not wider.

Application: Basmati rice is often used in Indian and Mediterranean dishes.

Nutrition: Whole grain basmati rice has the lowest glycemic index (GI) of all rice types.

Growing Areas: Arkansas, California, Louisiana, and Texas.

Fact: The word basmati means "queen of fragrance."



U.S. RED RICE

Physical: Long grain variety, has a deep-colored, honey-red bran.

Cooking: Cooked grains have a chewy texture and savory, nutty flavor.

Application: Salads, pilafs, soups, and side dishes.

Nutrition: Rich in anthocyanins which provide a boost of antioxidants.

Growing Area: California.

Fact: Red rice gets its unique color from its anthocyanins.



U.S. BLACK RICE

Physical: Medium grain variety, dark black bran.

Cooking: Cooked grains are slightly chewy with a subtle sweet spiciness.

Application: Porridge, desserts, and some traditional Chinese dishes.

Nutrition: Contains antioxidant anthocyanin and special phytonutrients.

Growing Area: California.

Fact: Black rice will turn the water it's cooked in into a deep purple color.





THE RD-APPROVED GUIDE

to U.S. - Grown Rice

Nutrients	Short Grain-White ¹	Short Grain-Brown ³	Medium Grain-White ⁵	Medium Grain-Brown ⁸	Long Grain-White ¹⁰	Long Grain-Brown ¹²	Wild Rice ¹³	Parboiled – White ¹⁵
Calories	353	358	354	360	356	363	358	364
Total Fat (g)	1	3	1	3	1	2	1.5	1
Saturated Fat (g)	0	1	0	1	0	1	0	0
Monounsaturated Fat (g)	0	1	0	1	0	1	0	0
Polyunsaturated Fat (g)	0	1	0	1	0	1	0	0
Carbohydrates (g)	81	77	79	76	79	78	76	81
Dietary Fiber (g)	1	4	1	5	1	3	6	2
Protein (g)	6	6	7	8	7	8	12	7
Sodium (mg)	3	4	3	4	0	4	11	3
Iron (mg)	0	1	0	2	2	1	2	2
Zinc (mg)	1	2 ⁴	1	2	2	2	6	1
Potassium (mg)	76	255 ⁴	95	280	86	204	310	165
Niacin (mg)	1	7 ⁴	2	7	2	4	6	6
Magnesium (mg)	21	115 ⁴	25	122	34	99	115	31
Selenium (µg)	0	6 ⁴	0	0	13	15	3	14
Folates, DFE (µg)	25	23 ⁴	27	20	66	30	76	65
Phosphorus (mg)	77	280 ⁴	96	309	119	277	362	150
Starch(g)	74 ²	67 ⁴	76 ⁶	67 ⁹	71 ¹¹	70	69 ¹⁴	76
Cholesterol (mg)	0	0	0	0	0	0	0	0
Glycemic Index*			75 ⁷	59 ⁷	60 ⁷			38 ⁷
Calcium (mg)	4	8	4	9	15	8	9	38

Value per 100 g raw rice

*For cooked rice

Nutrients	Parboiled-Brown ¹⁶	U.S. Aromatics-Black ¹⁷	U.S. Aromatics-Red ¹⁸	U.S. Aromatics-White Basmati ²¹	U.S. Aromatics-Brown Basmati ²³	U.S. Aromatics-White Jasmine ²⁵	U.S. Aromatics-Brown Jasmine ²⁷	Arborio ²⁹	Milled Short Grain Sweet Rice ³¹
Calories	365	357	351	349	353	358	354	352	357
Total Fat(g)	3	3	2	1	3	1	3	1	1
Saturated Fat (g)	1	1	1	0	1	0	1	0	0
Monounsaturated Fat (g)	1	1	1	0	1	0	1	0	0
Polyunsaturated Fat (g)	1	1	1	0	1	0	1	0	0
Carbohydrates (g)	77	76	75	78	75	79	76	80	81
Dietary Fiber (g)	3	5	6	2	5	2	4	1	1
Protein (g)	8	8	7	7	8	8	7	7	7
Sodium (mg)	0	0	3	0	0	0	0	0	0
Iron (mg)	1	1	1	0	1	0	1	0	0 ³²
Zinc (mg)	2	2 ¹⁸	2 ²⁰	1 ²²	2 ²⁴	1 ²⁶	1 ²⁸	1 ³⁰	13 ³²
Potassium (mg)	232	318 ¹⁸	279	98 ²²	259 ²⁴	99 ²⁶	272 ²⁸	90 ³⁰	111 ³²
Niacin (mg)	6	8 ¹⁸	8 ²⁰	2 ²²	7 ²⁴	1 ²⁶	8 ²⁸	2 ³⁰	2 ³²
Magnesium (mg)	120	131 ¹⁸	133	35 ²²	123 ²⁴	18 ²⁶	115 ²⁸	27 ³⁰	22 ³²
Selenium (µg)	16	0 ¹⁸	0	4 ²²	7 ²⁴	6 ²⁶	4 ²⁸	0 ³⁰	0 ³²
Folates, DFE (µg)	33	95 ¹⁸	15 ²⁰	32 ²²	39 ²⁴	14 ²⁶	22 ²⁸	0 ³⁰	20 ³²
Phosphorus (mg)	302	361 ¹⁸	341	135 ²²	324 ²⁴	90 ²⁶	306 ²⁸	94 ³⁰	67 ³²
Starch (g)	70	63 ¹⁸	64 ²⁰	69 ²²	66 ²⁴	75 ²⁶	65 ²⁸	73 ³⁰	73 ³²
Cholesterol (mg)	0	0	0	0	0	0	0	0	0
Glycemic Index*	64 ⁷			57 ⁷		89 ⁷		69 ⁷	
Calcium (mg)	8	8	8	6	9	6	8	5	5

Values per 100 g raw rice

*For cooked rice



THE RD-APPROVED GUIDE

to U.S.-Grown Rice

REFERENCES

1. Eurofins Food Integrity and Innovation. Certificate of Analysis Short Grain White Rice. September 5, 2018.
2. Covance Laboratories. Certificate of Analysis Short Grain White Rice. February 19, 2018.
3. Eurofins Food Integrity and Innovation. Certificate of Analysis Short Grain Brown Rice. September 5, 2018.
4. Covance Laboratories. Certificate of Analysis Short Grain Brown Rice. February 16, 2018.
5. Eurofins Food Integrity and Innovation. Certificate of Analysis Medium Grain White Rice. September 5, 2018.
6. Covance Laboratories. Certificate of Analysis Medium Grain White Rice. February 16, 2018.
7. Atkinson FS, Foster-Powell K, Brand-Miller JC. International Tables of Glycemic Index and Glycemic Load Values: 2008. *Diabetes Care*. 2008;31(12):2281-2283. doi:10.2337/dc08-1239.
8. Eurofins Food Integrity and Innovations. Certificate of Analysis Medium Grain Brown Rice. September 5, 2018.
9. Covance Laboratories. Certificate of Analysis Medium Grain Brown Rice. February 16, 2018.
10. Eurofins Food Integrity and Innovation. Certificate of Analysis Long Grain White Rice. September 7, 2018.
11. Covance Laboratories. Certificate of Analysis Long Grain White Rice. February 16, 2018.
12. Eurofins Food Integrity and Innovations. Certificate of Analysis Long Grain Brown Rice. September 5, 2018.
13. Eurofins Food Integrity and Innovation. Certificate of Analysis Wild Rice. September 5, 2018.
14. Covance Laboratories. Certificate of Analysis Wild Rice. February 16, 2018.
15. Eurofins Food Integrity and Innovation. Certificate of Analysis Parboiled White Rice. September 7, 2018.
16. Eurofins Food Integrity and Innovation. Certificate of Analysis Parboiled Brown Rice. September 5, 2018.
17. Eurofins Food Integrity and Innovations. Certificate of Analysis Black Rice. September 5, 2018.
18. Covance Laboratories. Certificate of Analysis Black Rice. February 19, 2018.
19. Eurofins Food Integrity and Innovation. Certificate of Analysis Red Rice. September 5, 2018.
20. Covance Laboratories. Certificate of Analysis Red Rice. February 21, 2018.
21. Eurofins Food Integrity and Innovation. Certificate of Analysis White Basmati Rice. September 5, 2018.
22. Covance Laboratories. Certificate of Analysis White Basmati Rice. February 19, 2018.
23. Eurofins Food Integrity and Innovations. Certificate of Analysis Brown Basmati Rice. September 5, 2018.
24. Covance Laboratories. Certificate of Analysis Brown Basmati Rice. February 19, 2018.
25. Eurofins Food Integrity and Innovation. Certificate of Analysis White Jasmine Rice. September 5, 2018.
26. Covance Laboratories. Certificate of Analysis White Jasmine Rice. February 19, 2018.
27. Eurofins Food Integrity and Innovations. Certificate of Analysis Brown Jasmine Rice. September 5, 2018.
28. Covance Laboratories. Certificate of Analysis Brown Jasmine Rice. February 19, 2018.
29. Eurofins Food Integrity and Innovations. Certificate of Analysis Arborio Rice. September 5, 2018.
30. Covance Laboratories. Certificate of Analysis Arborio Rice. February 19, 2018.
31. Eurofins Food Integrity and Innovations. Certificate of Analysis Milled Short Grain Sweet Rice. September 5, 2018.
32. Covance Laboratories. Certificate of Analysis Milled Short Grain Sweet Rice. February 19, 2018.