USA RICE FEDERATION

FACTS ABOUT
USA Rice

Nutritious Wholesome Healthy

The U.S. rice industry is unique in its ability to produce all types of rice—long, medium and short grain—as well as aromatic and specialty varieties.

USA Rice: Feeding Millions in America and Worldwide

More than three centuries in the making, today's U.S. rice industry is recognized as an innovative, technologically advanced, conservation-friendly, and dependable supplier of high-quality rice which, above all else, is committed to providing a safe, nutritious and abundant product to feed people here at home and around the world.

Rice first arrived in the Carolinas in the late 1680s, most likely from Madagascar. Rice lore has it that a storm-battered ship sailed into harbor in Charles Towne, South Carolina. To repay the colonists for repairs to his ship, the captain gave a small quantity of "Golde Seed Rice" (named for its color) to a local planter. The low-lying marshlands of the Carolinas and Georgia were ideal for rice production. By 1700, rice was a major crop for the colonists.

Rice is the primary dietary staple for more than half of the world's population.

Over the next 150 years, rice production gradually moved westward, taking root in today's Mid-South and Gulf Coast rice-producing areas. In California, the 1849 Gold Rush brought people from all nations, many of whom were rice eaters. By 1920, Sacramento Valley farmers had established the California rice industry.

Today six states—Arkansas, California, Louisiana, Mississippi, Missouri, and Texas—produce enough high-quality rice to feed America and millions of people around the world. When it comes to producing one of the world's most important foods, no one does it better than the U.S. rice industry.

Rice production, milling and marketing in the United States is a multibillion dollar industry, generating a chain of economic activity that is critical to the economic health of many rural communities.

Economy and Trade

Rice production and marketing in the United States is a multibillion dollar industry, with economic impacts at many levels, including the production and sale of agricultural inputs, such as seeds, fertilizer, machinery, and other agricultural services. Rice milling, processing and handling services—including trucking, storage, packaging, distribution, shipping, and related activities—are all links in the chain forged by serving domestic and international markets for U.S. rice. At the farm level alone, rice generates more than $1.5 billion in revenues.

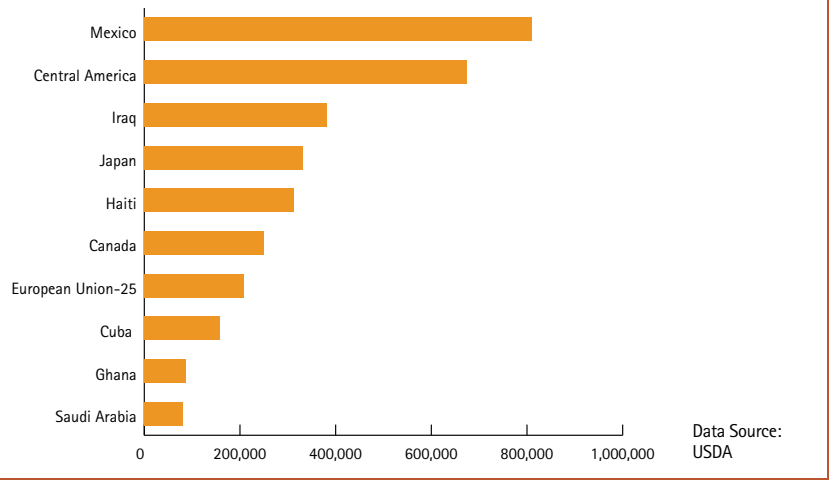
Rice is planted on more than 2.7 million acres (1.1 million hectares) in the United States. Practically all production takes place in six states—Arkansas, California, Louisiana, Mississippi, Missouri, and Texas—and in relatively small regions within these states. In these concentrated regions where the bulk of rice production occurs, it tends to be the most important of all crops produced—generating by far the most farm revenue—and supports an extensive network of specialized input suppliers, credit and lending services, and a large, capital-intensive milling industry that employs thousands.

The U.S. Department of Agriculture's most recent Census of Agriculture reported that 8,046 farms produced rice. On average, farms raising rice will harvest 397 acres (160 hectares) of rice, while farms raising corn will harvest 196 corn acres; soybeans, 228 acres; and wheat, 269 acres. Because of the large investments required for irrigation facilities, farm sizes and production levels for rice must be large enough to justify such heavy fixed expenditures. In the United States, all rice is produced under controlled irrigation, a major factor behind the consistently high yields achieved.

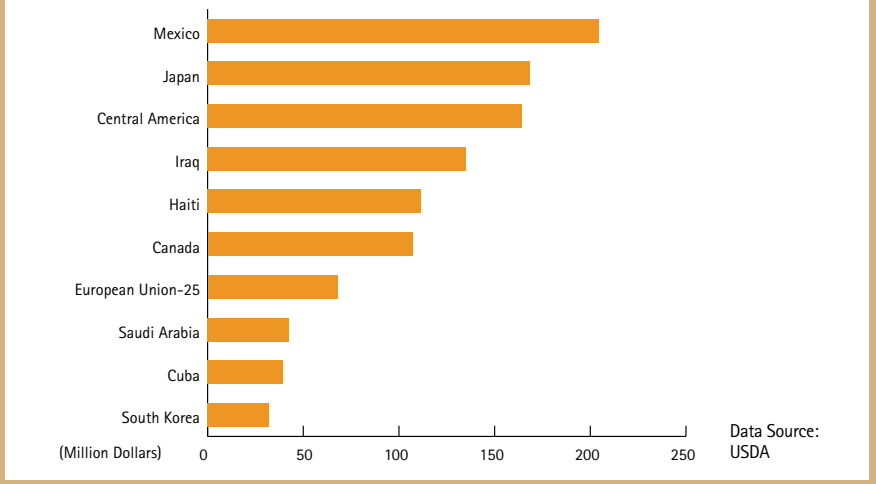
About half of the annual U.S. rice crop is used domestically. U.S. per capita rice consumption is 24 pounds a year.

About half of the crop is exported to customers around the world. In marketing year 2007-08, the United States was projected to be the world's fourth largest rice-exporting country, accounting for 3.3 million metric tons, or 11 percent, of global rice exports. Although export sales have declined modestly as a proportion of total U.S. rice production, export markets are still critical for U.S. rice and contribute significantly to a positive U.S. trade balance.

TOP 10 RICE EXPORT MARKETS 2006 (METRIC TONS)



TOP 10 RICE EXPORT MARKETS 2006 (DOLLAR VALUE)



DID YOU KNOW...

The U.S. is the largest non-Asian rice-exporting country. Although the United States produces less than 2 percent of the world's rice, it ranks among the world's top five rice-exporting nations.

Despite the continuing trend towards international market liberalization, rice remains one of the most protected global agricultural commodities. International markets for rice are volatile and highly distorted by government intervention. Rice production in key export markets benefits from a combination of high levels of subsidies, tariffs, and border protection that discourage imports of certain types and forms of rice, to the detriment of U.S exporters.

U.S. rice exports also suffer in former top markets like Cuba, where U.S. trade sanctions constrain sales. Nonetheless, through the market development and promotional efforts of the U.S. rice industry, consumption of U.S.-grown rice has increased in such key markets as Mexico, Ghana, Canada, Honduras, Costa Rica, and Panama.

Rice is a natural fit for food aid programs because it is culturally accepted worldwide. The U.S. rice industry typically supplies between 50,000 to 90,000 metric tons of rice each year for food aid programs, which plays an important role in humanitarian food assistance around the world.

US RICE HARVEST (2007 vs. 2006)

The USA Rice Federation

The USA Rice Federation is the global advocate for all segments of the U.S. rice industry with a mission to promote and protect the interests of producers, millers, merchants and allied businesses.

The USA Rice Producers' Group, USA Rice Millers' Association, USA Rice Merchants' Association and the USA Rice Council are all members of the USA Rice Federation. Each organization has a distinct identity and mission, overseen by its own board of directors. They work together through the Federation, which ensures a strong, united industry voice.

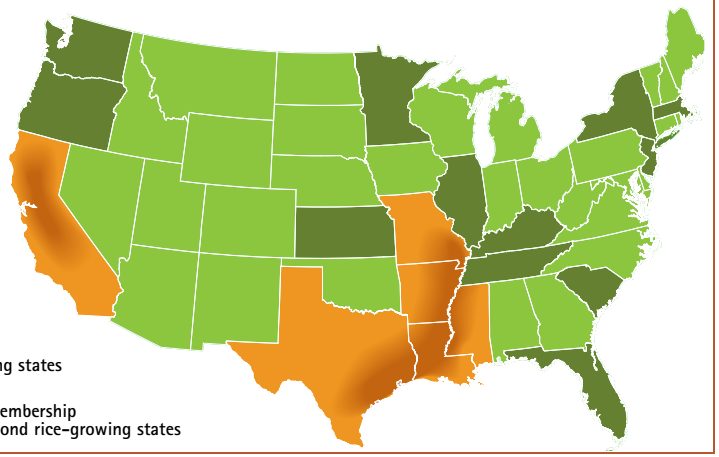
Rice-related business and economic benefits extend far beyond the six major rice-producing states.

USA Rice Producers' Group is composed entirely of rice farmers. This representative body ensures a forum for policy development on issues that affect rice farmers, and a voice for rice farmers to advance and implement activities to address those issues.

USA Rice Millers' Association, founded in 1899, is one of the oldest agribusiness organizations in America. RMA members include farmer-owned cooperatives and privately owned mills, with mill members in Arkansas, California, Florida, Louisiana, Mississippi, Missouri, and Texas. Associate members include exporters, shippers and other businesses allied with the rice trade, representing business operations in more than 17 states.

RICE ACROSS AMERICA

Supplying U.S.-grown rice for supermarkets, restaurants, ingredient use and exports provides a chain of jobs across America.



USA Rice Merchants' Association members are an important component of the U.S. rice industry, providing a market outlet for thousands of farmers in all six rice-producing states. The USA Rice Merchants' Association was the first organization to bring rice merchandisers and related businesses together in a representative, recognized body.

USA Rice Council brings rice farmers, dues-paying mills and other industry members together to steer the course for domestic and international promotion. Programs are implemented through the USA Rice Federation, which conducts export market promotions in working partnership with the U.S. Department of Agriculture's Foreign Agricultural Service.

Types of Rice

Worldwide, there are more than 120,000 different varieties of rice, though only a small number offer the quality acceptable for commercial growth in the United States. These varieties can be divided into long, medium and short grain rice. An increasing number of sweet, aromatic and arborio rice varieties are also produced in the United States.

The principal differences in these varieties are their cooking characteristics, texture and some subtle flavor variation. From a nutritional standpoint the varieties are equal and can be used interchangeably, depending on the recipe.

DID YOU KNOW...

Americans consume an average of 24 pounds of rice per person per year.

Forms of Rice

To meet consumer preferences and the special requirements of packaged foods, rice undergoes varying degrees of processing, yielding different forms. Rice can be purchased cooked or uncooked and is available dry, refrigerated, frozen or ready to heat and eat. The influx of convenience foods has brought consumers rice in bags, pouches and cartons.

CHARACTERISTICS OF BASIC RICE TYPES

LONG GRAIN

Long grain rice has a long, slender kernel three to four times longer than its width. Due to its starch composition, cooked grains are more separate, light and fluffy compared to medium or short grain rice.

MEDIUM GRAIN

Medium grain rice, when compared to long grain rice, has a shorter, wider kernel that is two to three times longer than its width. Cooked grains are more moist and tender than long grain, and have a greater tendency to cling together.

SHORT GRAIN

Short grain rice has a short, plump, almost round kernel. Cooked grains are soft and cling together, yet remain separate and are somewhat chewy, with a slight springiness to the bite.

CHARACTERISTICS OF BASIC RICE FORMS

ROUGH (PADDY) RICE is rice as it comes from the field. Rice kernels are still encased in an inedible, protective hull.

BROWN RICE has the outer hull removed, but still retains the bran layers that give it a tan color, chewy texture and nut-like flavor. Retaining the nutrient-dense bran layer makes brown rice a 100% whole grain food, rich in minerals and vitamins, especially the B-complex group. Regular brown rice cooks in 40 to 45 minutes, and quicker cooking brown rice products are available.

REGULAR-MILLED WHITE RICE has the outer husk removed and the layer of bran milled away until the grain is white. Most U.S. milled rice is enriched after milling.

PARBOILED RICE is rough rice that has gone through a steam-pressure process before milling. This procedure gelatinizes the starch in the grain, and ensures a firmer, more separate grain.

PRECOOKED RICE, also called quick-cooking or instant, is white or brown rice that has been completely cooked and dehydrated. This process reduces the time required for cooking.

RETORT (OR READY TO HEAT) RICE is precooked rice that can be heated in the microwave in just a couple of minutes.

SPECIALTY RICE VARIETIES OF THE UNITED STATES

 U.S. JASMINE TYPE RICE	An aromatic long grain rice that has a distinctive aroma and flavor similar to that of popcorn or roasted nuts. Cooked grains are soft, moist and cling together.
 U.S. BASMATI TYPE RICE	An aromatic long grain rice that has a distinctive aroma and flavor similar to that of popcorn or roasted nuts. When cooked, it expands only lengthwise, resulting in long slender grains that are dry, separate and fluffy.
 DELLA, DELROSE, AND DELMONT VARIETIES	These combine the qualities of regular long grain rice and basmati rice. They have an aroma similar to basmati; however, cooked grains swell in both length and width, like regular long grain rice.
 U.S. AROMATIC RED RICE	A deep-colored, honey-red bran. Like brown rice, it is minimally processed to retain its bran layers and takes 40 to 45 minutes to prepare. Cooked grains have a savory, nutty flavor and are slightly chewy.
 U.S. BLACK JAPONICA	An aromatic rice with a dark black bran. Like brown rice, it is minimally processed to retain its bran layers and takes 40 to 45 minutes to prepare. Cooked grains are slightly chewy with a subtle sweet spiciness.
 U.S. ARBORIO RICE	A large, bold rice with a characteristic white dot at the center of the grain. In terms of length/width ratio and starch characteristics, it is classified as a medium grain rice. Primarily used in risotto, this rice develops a creamy texture around a chewy center and has an exceptional ability to absorb flavors.
 U.S. SWEET RICE	Short and plump with a chalky white, opaque kernel. When cooked, sweet rice loses its shape and becomes very sticky and glutinous. It is used in commercial product formulations, for example, gravies and sauces.

DID YOU KNOW...

Research conducted by Iowa State University showed that consumers who eat rice have healthier diets than non-rice eaters.

Processing & Co-Products

The properties of rice—nutrition, neutral flavor, least allergenic of all grains, digestibility, and functionality (extrusion, puffing, crisping, freezing and thawing)—make it a highly desirable ingredient in processed foods. While rice stands apart from most grains because it is generally consumed in its kernel form, its properties are ideal components in the manufacturing of cereals, snack foods, baby foods, frozen dinners, sauce thickeners and other products. Each part of the rice grain has many uses.

Rice Hulls

Rice hulls are the outer covering or husk layer that encloses the rice kernel while growing. Hulls are inedible, but can be burned as a fuel for power plants or rice mills. Rice hulls can also be used as mulch, as a component in abrasives and other products.

Stabilized Rice Bran

Rice bran is the outer layer on brown rice which gives the kernel its brown color and nutty flavor. It is an excellent source of thiamin, niacin, vitamin B-6, iron, phosphorous, magnesium, potassium and fiber. It is used as an ingredient in cereals, baking mixes and vitamin concentrates. Non-food grade bran is used in livestock feeds.

Rice Bran Oil

Rice bran oil is extracted from rice bran. It is a high-quality cooking oil with an excellent balance of fatty acids. Studies show that antioxidants in the rice bran oil are effective in reducing serum cholesterol.

RICE FORMS

Individually Quick Frozen (IQF) Rice. Cooked rice grains that are individually frozen before packaging to provide a free-flowing ingredient for use in frozen and prepared food products.

Crisped/Puffed/Expanded Rice. Rice kernels can be processed in a variety of ways and shapes to meet particular manufacturing needs. Candy bar, energy and nutrition bars and cereal applications commonly require crisped, puffed or expanded rice.

Rice Meal and Flour. Whole or broken kernels of rice can be ground and sifted into meal or flour. Selected rice types are available in pregelatinized flour or meal form for those applications requiring it for functionality. Rice meal and flour are often the preferred choice of manufacturers when creating products targeted to consumers with food allergies or who are gluten-intolerant.

Broken Kernels. These are the pieces of the rice kernel that are less than ¾ length of the intact kernel. Head rice is between ½ to ¾ of the original kernel. Brewers rice is about ¼ kernel. Broken kernels can be milled into flour for use in many products including baby food. Brokens are used predominantly in pet foods.

Rice Starch, Syrup and Protein. With further processing, starch, syrups of different sweetness levels and rice protein concentrate can be made for further use in developing food products.

MAJOR PROCESSED FOOD USES OF RICE

DID YOU KNOW...

September is National Rice Month.

Whole Kernel Uses

The major use of rice is consumption of the intact kernel in frozen foods, mixes, and canned products such as soups.

Beer Brewing

Rice is used as a starch source in beer making. It is ranked high compared to other cereals because of its yield, overall performance in the brew house and its influence on beer stability, flavor, color and quality. Today, whole kernels are predominantly used; in the past, broken kernels were the form of rice used (brewers rice).

Rice Cereals

There are many kinds of rice breakfast cereals on the market. Rice cereals that require cooking are made from granulated rice (meal). Ready-to-eat rice cereals may be made from the whole grain or its milled product, or can be made from rice flour that has been cooked and extruded into various shapes.

Baby Foods

Rice is an important ingredient in commercially produced baby foods because it is easy to digest and the least allergenic of all grains. Rice and rice flour are used in the formulation of many meat and vegetable combinations, but the largest use is in the manufacture of pre-cooked instant rice cereals.

Snack Foods, Candy, Energy Bars

Puffed, crisped, and extruded rice kernels, as well as rice flours, are used in snack foods, candy and energy bars. Rice adds crispness to fried/baked items. The puffed, crisped and extruded kernels add texture and a chewy mouth-feel to products.

How to Prepare Rice

American-grown rice is a high quality, clean product that does not need washing or rinsing before or after cooking. Most U.S. rice is enriched with iron, niacin, thiamin, and folic acid. Rinsing rice, or cooking rice in excess water and draining, results in loss of enrichment and other water-soluble vitamins and minerals. For best results, follow package directions. When directions are not available, use one of these easy methods:

Stovetop Directions

Combine rice, liquid, salt and butter or margarine (see chart) in 2- to 3-quart saucepan. Heat to boiling; stir once or twice. Reduce heat; cover and simmer according to time specified on chart. If rice is not quite tender or liquid is not absorbed, replace lid and cook 2 to 4 minutes longer. Fluff with fork.

Conventional Oven Directions

Cooking rice in the oven is an efficient use of energy when other foods are baking and frees up your stovetop when cooking other dishes. Boiling liquid must be used to start the cooking process. Carefully combine rice, boiling liquid, salt and butter or margarine (see chart) in a baking dish or pan; stir. Cover tightly and bake at 350 degrees for 25 to 30 minutes for long grain white rice (30 to 40 minutes for parboiled; 1 hour for brown rice). Remove carefully. Fluff with fork.

Rice Cookers

Rice cookers make cooking white and whole grain brown rice easy and foolproof, and keeps rice warm. There are many brands, styles, sizes and features available. Care should be taken to follow the individual manufacturer's directions. In general, all ingredients are combined in the rice cooker. Turn the rice cooker on. It will stop cooking automatically by sensing a rise in temperature and change in moisture content that occurs when the rice has absorbed all the liquid.

RICE COOKING GUIDELINES			
1 Cup Uncooked Rice	Liquid	Cooking Time	Yield
Regular-milled long grain	2 cups*	15 minutes	3 to 4 cups
Regular-milled medium grain	2 cups*	15 minutes	3 cups
Regular-milled short grain	1¼ cups	15 minutes	3 cups
Whole grain brown	2¼ cups	40 to 45 minutes**	3 to 4 cups
Parboiled	2¼ cups	20 minutes	3 to 4 cups
Precooked, flavored or seasoned mixes	Follow package directions	varies	varies

*For firmer rice, reduce water by ¼ cup.
**For parboiled whole grain brown, cook 30 minutes.
If desired, add 1 teaspoon salt and 1 tablespoon butter or margarine.

Storing Rice

DID YOU KNOW...

Rice triggers serotonin in the brain, a chemical that helps regulate and improve mood.

Milled rice (white, parboiled or pre-cooked)

If stored properly, this rice will keep almost indefinitely on the pantry shelf. Once opened, rice should be stored in a tightly-closed container that keeps out dust, moisture and other contaminants.

Whole grain rice (brown, red or black)

Because of the oil in the bran layer, this rice has a shelf life of approximately six months. Refrigerator or freezer storage is recommended for longer shelf life.

Cooked

Cooked rice, when not eaten immediately, should be cooled quickly. To store, place in shallow container, cover tightly, and refrigerate or freeze. Cooked rice may be stored in the refrigerator for up to five days or frozen up to six months.

MyPyramid.gov
STEPS TO A HEALTHIER YOU

Grains	Vegetables	Fruits	Oils	Milk	Meat & beans
Make half your grains whole	Vary your veggies	Eat a variety of fruits. Go easy on juices	Limit saturated fats, trans fats and sodium	Eat low-fat or fat-free dairy products	Choose low-fat or lean meats, poultry & beans
Recommended daily amounts based on a 2,000 calorie diet					
6 oz./day	2.5 cups/day	2 cups/day	Limit intake	3 cups/day	5.5 oz.

Rice & Nutrition

Rice is the perfect foundation for today's healthier eating. It is a complex carbohydrate that supplies energy, fiber, essential vitamins and minerals and beneficial antioxidants. Rice combines well with other healthy foods such as vegetables, meat, seafood and poultry, beans and soy foods. In fact, research conducted by Iowa State University found that people who eat rice have healthier diets overall. They eat more fruits and vegetables, less added sugar and fat and are more likely to eat a diet consistent with the 2005 U.S. Dietary Guidelines for Americans.

According to the Dietary Guidelines and MyPyramid, enriched and whole grain foods, like enriched white rice and whole grain brown rice, are among the food groups that form the basis of a healthy diet. The Guidelines state that 45-65 percent of daily calories should come from nutritious carbohydrates, with at least half of all grain servings from whole grains and the remaining servings from either whole grain foods or enriched grain products for the important vitamins and minerals that they provide, including iron and folic acid. Each half-cup of cooked rice is equal to one ounce equivalent or one grain serving.

Rice is naturally nutritious and fits today's recommendations to get the most nutrition from calories consumed.

FOOD GUIDE PYRAMID

The USDA MyPyramid is designed to illustrate the 2005 Dietary Guidelines for Americans on what and how much to eat for optimal health. The colorful wedges each represent a food group. For most adults, six to ten servings of grains are recommended per day, depending upon daily calorie needs. MyPyramid for Kids follows the same principles. For young children, three servings per day of grains are recommended but older children should eat five or more servings, based on age, gender and activity level.

Nutrition Facts
Enriched White Rice

Serving Size 1/2 cup cooked rice
Calories 103

	% Daily Value*
Total Fat 0 g	0%
Saturated Fat 0 g	0%
Trans Fat 0 g	
Sodium 0 mg	0%
Total Carbohydrate 22 g	7%
Dietary Fiber 0.5 g	2%
Protein 2 g	4%
Iron 0.95 mg	5%
Thiamin 0.129 mg	8%
Niacin 1.166 mg	5.8%
Folate 46 mcg	11.5%

* Based on USDA Data

Nutrition Facts
Whole Grain Brown Rice

Serving Size 1/2 cup cooked rice
Calories 108

	% Daily Value*
Total Fat 1 g	1%
Saturated Fat 0 g	0%
Trans Fat 0 g	
Sodium 5 mg	0.2%
Total Carbohydrate 22 g	7%
Dietary Fiber 2 g	8%
Protein 2.5 g	5%
Iron 0.41 mg	2%
Thiamin 0.094 mg	6%
Niacin 1.49 mg	7%
Folate 4 mcg	1%

* Based on USDA Data

Rice:

- Is sodium- and cholesterol-free
- Has only a trace of fat and has no cholesterol-raising trans fat or saturated fat
- Is gluten-free and the least allergenic of all grains
- Is nutrient-dense and contributes over 15 vitamins and minerals — including folic acid and other B-vitamins, iron and zinc
- Has approximately 100 calories per half-cup cooked serving
- Is comprised of complex carbohydrates that are more slowly digested than simple sugars, allowing the body to maintain more consistent energy levels
- Triggers the neurotransmitter serotonin in the brain that helps regulate appetite and improve mood
- Is an energy food, supplying complex carbohydrates that the body and brain need to function.

Enriched White Rice

Enriched white rice has added thiamin, niacin, iron and folic acid to restore nutrients after processing. And, enriched white rice is fortified with substantially more of the B-vitamin folic acid to help prevent chronic disease and birth defects. Since folic acid fortification of grains began in 1998, deaths from heart attack and stroke have declined by more than three percent and there has been a significant decrease in some types of birth defects. New research continues to show the benefits of folic acid throughout the life cycle, including a reduced risk of certain cancers and Alzheimer's disease.

Whole Grain

Brown rice is a 100% whole grain. A half-cup serving of cooked brown rice counts as one whole grain serving. Whole grains contain the nutrient-dense bran and inner germ layer where the majority of beneficial compounds are found, and the starchy endosperm where most of the carbohydrate calories are located. Whole grains like brown rice help reduce the risk of chronic diseases such as heart disease, diabetes and certain cancers, and play a role in weight management. Red and black whole grain rice varieties are also increasingly popular in the U.S. and offer all the whole grain goodness of brown rice.

Rice Production's Environmental Contributions

Rice farming is one of the few agricultural activities where a positive impact on the environment is widely recognized. All of the major rice-production areas in the United States correspond with important areas of waterfowl activity during winter months. Rice-growing areas provide surrogate habitats for hundreds of wildlife species that rely on wetland conditions for species survival, some of which are currently or could be threatened if not for the wetland environments provided by flooded rice fields. Without rice farming, wetland habitats in the United States would be vastly reduced. A loss of this magnitude would have a disastrous effect on waterfowl, shore birds and a host of other wetland-dependent species. These widely noted environmental benefits accrue not only to wildlife as well as current and future generations of wildlife enthusiasts, but also produce economic benefits that support recreational industries and, ultimately, local economies.

www.usarice.com

www.usarice.com/industry
In-depth source for news and information pertaining to all facets of the U.S. rice industry.

www.usarice.com/consumer
Consumer section features downloadable recipes and recipe brochures, preparation and storage information.

www.usarice.com/ricefits
Nutrition section has the latest information on the health benefits of rice and has downloadable nutrition brochures and fact sheets.

www.usarice.com/processing
Food Processing section provides ways to use rice as an ingredient, and features research information and a downloadable "Rice 101" technical kit.

www.menurice.com
Foodservice Web site provides culinary professionals with rice recipes, ideas for menus and educational demos.

USA Rice FEDERATION

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