POWER of GRAINS
yesterday, today, and tomorrow

Kellogg's
Grains have been an important food source for people for longer than you might expect. Our ancestors discovered them long before they started enjoying all the good things grains do. Over the years at Kellogg, we’ve learned so much about the power of grains, we thought it was important to share some of that knowledge with you. On the following pages, you will learn about the history of grains, how grains provide important nutrients for your body, and why grains are a sustainable food source for our planet.

In the Beginning, There Were Grains

- **First Discovered 105,000 years ago**
  Archaeologists first discovered stone tools used to grind seeds from sorghum grass.

- **Confirmed Use 23,000 years ago**
  First confirmed use of grains in the human diet, based on charred barley and wheat found in Israel.

- **Rice, Corn, Wheat Between 8,000 - 13,500 years ago**
  Rice, corn, and wheat were first farmed in Asia, Mexico, and the Near East.

- **Oats 3,200 years ago**
  Oats were domesticated in Europe.

- **Green Revolution 1940-1960**
  The “Green Revolution” increased grain production to help feed billions around the world.

- **Sustaining the World 2015 and beyond**
  Grains are becoming more recognized as one of the most sustainable sources of nutritious food.
For thousands of years, farmers have cross-pollinated related plants to improve their food quality, taste, and growth resiliency. The increased adoption of sustainable farming practices, science, and technology in recent decades, make it possible to feed an increasing populated world. By 2050, 70 percent more food production will be required with limited natural resources. Advancing the quality, nutrition, and sustainability of grains is critical to achieving this goal.

With the human population expected to reach 9.6 billion people by 2050, grains will be a vital source of nutrients to feed the world.

Imagine pasta without wheat, tacos without corn, or even curry without rice. The world has more than 50,000 edible plants but only three (rice, wheat, and corn) provide 60% of the world’s food energy and are a staple to 4 billion people.

What makes grains so popular?

1. **Affordable**
   - They provide important nutrients at low cost.

2. **Adaptable**
   - They are adaptable, resilient, and use less natural resources than other foods.

3. **Accessible**
   - They can be stored for long periods of time in their natural form.

Rice, Wheat, Corn

World’s food energy

60%

Other
EXPLORE THESE UNIQUE SPECIALTY GRAINS

AKA: KING TUT’S WHEAT
Heritage: Khorasan is a strain of ancient wheat from the Near East. The exact origin remains unknown.
Nutrition: On average it contains approximately 17% more fatty acids and 25% more protein than traditional wheat. It also has more than three times the average amount of calcium, is high in iron, magnesium, phosphorus, potassium, and is the only grain to contain vitamin C. It also contains more than three times the average amount of calcium, is high in iron, magnesium, phosphorus, potassium, and is the only grain to contain vitamin C.
Flavor: This grain has a chewy texture and a nutty, rich flavor.

AKA: THE COLORFUL SEED
Heritage: Millet is found in India and Africa, was domesticated 4,000 years ago, and can be found in various colors such as gray, yellow, white, or red.
Nutrition: This gluten-free whole grain is a good source of B vitamins, such as thiamin, riboflavin, niacin, pantothentic acid, B6, and folic acid.
Flavor: Millet has a decidedly mild flavor.

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AKA: DINKLE WEED
Heritage: Spelt is one of the oldest cultivated grains. This hardy grain requires less fertilizer and is more resistant to disease, making it an excellent variety for organic farming.
Nutrition: It is higher in protein than common wheat.
Flavor: Spelt has a slightly sweet nutty flavor.

AKA: THE GOLD OF THE AZTECS
Heritage: Sorghum comes from Mexico, where it was domesticated 6,000 years ago.
Nutrition: Sorghum contains iron, magnesium, Vitamin B1, B3, and B6. It also has more than three times the average amount of calcium, is high in iron, magnesium, phosphorus, potassium, and is the only grain to contain vitamin C.
Flavor: Sorghum has a crunchy texture similar to wheat berries and a mild, lightly sweet taste.

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AKA: THE PROTEIN KING
Heritage: Quinoa is grown in South America’s Andean region and first domesticated 3,000 to 4,000 years ago.
Nutrition: Quinoa is not only gluten free but also high in potassium, provides protein and is a good source of fiber. It also contains more than three times the average amount of calcium, is high in iron, magnesium, phosphorus, potassium, and is the only grain to contain vitamin C. It also contains more than three times the average amount of calcium, is high in iron, magnesium, phosphorus, potassium, and is the only grain to contain vitamin C.
Flavor: Although not a true grain, this pseudocereal grain has a delightfully nutty flavor.

AKA: THE RUBBED GRAIN
Heritage: Freekeh is a young green wheat from the Fertile Crescent area that undergoes threshing or “rubbing” and then is carefully set on fire to create its unique flavor, texture and color.
Nutrition: Freekeh provides fiber and B vitamins.
Flavor: There is a slightly smokey note to this grain.

AKA: THE SURVIVOR
Heritage: Sorghum is drought- and heat-tolerant grain comes from Australia, Africa, and Asia and was domesticated in Africa 5,000 to 6,000 years ago.
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AKA: LOVEGRASS
Heritage: Teff comes from Africa. It was domesticated 7,000 to 10,000 years ago.
Nutrition: Along with a high calcium and magnesium content, teff is a good source of dietary fiber. It is a gluten-free grain.
Flavor: This grain has a lightly sweet, molasses-like taste.

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Kellogg continues to seek out grains that provide unique flavors, textures, colors, and nutrition to create a variety of delicious and nourishing foods.
10 THINGS TO KNOW ABOUT GRAINS

Ever wonder how grains turn into food or what nutrients grains provide? Read on to learn what makes these little powerhouses of nature so special.

What is a grain, anyway?

Grains come from any plant in the grass family that has edible seeds such as barley, corn, oats, rice, rye and wheat. Quinoa, amaranth and buckwheat are pseudograins that unlike true grains come from non-grasses but are similar in composition and use. The seeds of either one are harvested and prepared into the grain foods you enjoy everyday.

How do grains go from field to the table?

There are 3 simple steps to create many of the grain foods you love and enjoy every day.

Growing

Grains can take up to nine months to grow in the fields. Increasingly farmers ensure their grains have the best possible upbringing, applying best practices in sustainable agriculture, from seed to harvest.

Preparing

Once harvested, grains require cracking or splitting to unlock the wealth of nutrients hidden inside. Our ancestors used heavy stones to grind the grain, taking hours to prepare enough for just one meal. Over time, larger millstones were built, reducing grinding time. Once ground, grains can be made into different foods and stored for the future.

Enjoying

Although the mills we use today are larger, the process hasn’t changed much. The difference is that it now takes a couple of hours to create many of the grain foods, for example, breakfast cereals and snacks you enjoy every day.

Which grain is the healthiest?

Just as there is no healthiest vegetable or fruit, there is no healthiest grain. Whole and enriched grains may contain fiber, protein, iron, folate, zinc, and thiamin, all important for energy and good health. Each individual grain has varying levels of these nutrients. By simply enjoying the pleasure of eating a variety of grains prepared in your favorite ways, you’ll inherently obtain different nutritional benefits and receive all the goodness of the grains.

Do grains contain carbs?

Yes, grains, along with fruits, vegetables, legumes, and dairy products are a nutritious source of carbohydrates. Carbohydrates are the “go-to” fuel for the body and brain. According to the Institute of Medicine, people should consume between 45 and 65% of their daily calories from carbohydrates.

Do grains have protein?

Yes! In fact, wheat alone provides approximately 20% of the protein consumed by more than half of the world’s population. The protein in grains helps to complement other foods with protein including legumes and seeds. By eating a variety of plant-based proteins, you can obtain the protein your body needs.

<table>
<thead>
<tr>
<th>Calories from other food</th>
<th>Calories from carbohydrates</th>
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<tbody>
<tr>
<td>Suggested Daily Calorie Consumption</td>
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8

9
Like fruits and vegetables, whole grains contain a broad range of antioxidants, including polyphenols and carotenoids. Antioxidants are present mainly in the germ and outer layers of the grain. Research indicates that antioxidants help to fight free radicals.

**Do whole grains have antioxidants?**

We're encouraged to work more whole-grain foods into our daily meals since they can provide complex carbohydrates, fiber, vitamins, and minerals. Different whole grains vary in the amounts of these nutrients so it is important to consume a variety of whole grains. Enriched and fortified grain foods can also be a part of a healthy eating pattern and help us meet nutrient needs.

**Why make half your grains whole?**

Gluten is a naturally occurring plant protein that is present in wheat, barley, rye and certain other grains. It helps maintain the texture of breads, doughs, and pasta. People with Celiac disease must avoid gluten to prevent harmful side effects. Indirect evidence suggests that celiac disease which affects around 1% of the general population, is slightly less common than non-celiac gluten sensitive.

**What about gluten?**

For those without celiac disease or gluten sensitivity, there is no reason to avoid grains containing gluten. In fact, grain based diets have been shown to be part of a healthy lifestyle.

**What's special about the "crunch" of grain-based foods?**

There are two ways that nutrients can be added to grain foods to help consumers obtain nutrients that are lacking in their diets.

**Enrichment**

This is when nutrients lost during grain milling are added back to the flours. These typically include the vitamins thiamin, niacin, riboflavin, and folic acid as well as the mineral iron, all of which are important for public health.

Enrichment of B vitamins (niacin, thiamin, and riboflavin) in refined grain products in the 1940s reduced the occurrence of the diseases beri beri and pellagra in the USA.

**Fortification**

This is when nutrients typically not found in the food can be added to help improve its nutritional content and address public health concerns. Two examples are adding vitamin D to skim milk or vitamin A to cereal.

In the US, fortifying grain foods with folic acid decreased neural tube birth defects by 23%. This impact on public health continues today. It’s been shown that people who eat enriched and fortified breakfast cereals are meeting more of their nutrient requirements than those who eat non-cereal breakfast or no breakfast at all.

* when allowed by local regulation

**Why are some nutrients added to grains & grain foods?**

These enhanced flavors and crispy textures have been shown to be highly appealing, suggesting that crunchiness can improve the sensory experience of eating.
EXCITING THE TASTE BUDS, DELIVERING NOURISHMENT

Grains offer families fun and enticing ways to surprise their senses and satisfy their desire for great tasting foods that are good for them. More and more families are beginning to discover how grains can complement other foods, providing a versatile array of tastes. Enjoy some of our Kellogg grain-based favorites at your next breakfast or snack.

Peach Crunch:
- Raisin Bran, yogurt, peaches, and pecans

Get Your Grain Today

Add crunch to your bean dip
Create a fluffy Eggo parfait
Spice up Special K® with avocado and cayenne
Serve up warmth and creaminess
When W.K. Kellogg founded our company in 1906, he understood the importance of grains to the human diet. Today, we continue to be focused on helping families around the world unlock the power of grains and wholesome grain-based foods. We hope you enjoyed this bowlful of information, and you can count on us to stay focused on grains into the future.
Kellogg’s® Nutrition that matters®
kelloggsnutrition.com

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