ROWER -of-GRAINS

yesterday, today, and tomorrow





IN THE BEGINNING, THERE WERE GRAINS

barley and wheat found in Israel.²

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.



Near East.

The "Green Revolution" increased grain production to help feed billions around the world.

from sorghum grass.¹



4,000 BC 2015 AD

Green Revolution

Sustaining the World 2015 and beyond

Grains are becoming more recognized as one of the most sustainable sources of nutritious food.

GRAINS FOR A GROWING 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.⁵



What makes grains so popular?

Affordable

They provide important **f** They are adaptable, nutrients at low cost. resilient, and use

Adaptable

They are adaptable, resilient, and use less natural resources than other foods.^{6,7,8}

Accessible

They can be stored for long periods of time in their natural form.

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.⁹

For thousands of years, farmers have crosspollinated 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.



source

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EXPLORE THESE UNIQUE SPECIALTY GRAINS

Kellogg continues to seek out grains that provide unique flavors, textures, colors, and nutrition to create a variety of delicious and nourishing foods.



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.¹⁰ Flavor: This grain has a chewy texture and a nutty, rich flavor.

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 aluten-free arain.¹¹ Flavor: This grain has a lightly sweet, molasses-like taste.

AKA: THE COLORFUL SEED

Heritage: Millet is found in India and Africa, was domesticated 4,000 years ago, and it 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, pantothenic acid. B6. and folic acid.¹⁵ Flavor: Millet has a decidedly mild flavor.



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. Nutrition: Sorghum contains iron, magnesium, Vitamin B1, B3, and B6.12

Flavor: Sorghum has a crunchy texture similar to wheat berries and a mild, lightly sweet taste.

AKA: THE GOLD OF THE AZTECS

Heritage: Amaranth comes from Mexico, where it was domesticated 6,000 years ago.

Nutrition: Amaranth's gluten-free protein quality is considered to be among the highest of all grains.¹³ 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.14 Flavor: It is slightly crunchy and has a peppery taste.

AKA: THE PROTEIN KING

Heritage: Quinoa is grown in South America's Andean Heritage: Freekeh is a young green wheat from the region and first domesticated 3,000 to 4,000 years ago. Fertile Cresent area that undergoes threshing or **Nutrition:** Quinoa is not only gluten free but also "rubbing" and then is carefully set on fire to create high in potassium, provides protein and is a good its unique flavor, texture and color. source of fiber.¹⁷ Nutrition: Similar to wheat, Freekeh provides fiber Flavor: Although not a true grain, this pseudocereal and B vitamins.¹⁸ grain has a delightfully nutty flavor. Flavor: There is a slightly smokey note to this grain.





SPELT

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.¹⁶ **Flavor:** Spelt has a slightly sweet nutty flavor.



FREEKEH

AKA: THE RUBBED GRAIN

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-grassess but are similar in composition and use. The seeds of either one are harvested and prepared into the grain foods you enjoy everyday.



2

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





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.



Calories from

carbohydrates

Suggested Daily Calorie Consumption 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 have protein?

Yes! In fact, wheat alone provides approximately 20% of the protein consumed by more than half of the world's population.¹⁹ The protein in grains helps to complement other foods with protein including legumes and seeds. By eating a variety of plantbased proteins, you can obtain the protein your body needs.



Why make half your grains whole?

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.²⁰

Do whole grains have antioxidants?

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.²¹



8

Why are some nutrients added to grains & grain foods?



* when allowed by local regulation

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.²²

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%.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.^{22,24}

What about gluten?

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.²⁵

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?

When a grain is baked, the grain components interact and transform to create unique

TEXTURES AND FLAVORS.

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

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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.

![](_page_6_Picture_4.jpeg)

![](_page_6_Picture_6.jpeg)

and cayenne

### **Get Your Grain Today**

Add crunch to your bean dip

☆ Create a fluffy *Eggo*<sup>®</sup> parfait

Spice up *Special K*<sup>®</sup> with avocado Serve up warmth and creaminess

![](_page_6_Picture_14.jpeg)

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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.

![](_page_7_Picture_2.jpeg)

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![](_page_7_Picture_18.jpeg)

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