

MEET PULSES:

The Next Big Superfood Category

What are pulses?

In technical terms, they're the dry, edible seeds of plants in the legume family. In understandable terms, they're a category of superfoods that includes chickpeas, lentils, dry peas, and bean varieties. They're also incredibly healthy, affordable, sustainable and tasty.

If pulses are so great, why haven't I heard of them?

Remember when you didn't know what quinoa or acai berries were, and now they're everywhere? While you may know pulses by their individual names – chickpeas, lentils, dried peas and beans – this year "pulses" will become a household term. That's because the United Nations declared 2016 as the International Year of Pulses, and will help raise awareness about them across the globe all year.

How affordable are pulses?

Pulses are one of the most cost-effective proteins around. Compare the cost per serving for lentils at just 10 cents to quinoa's 59 cents or beef's \$1.49.

Cost per serving data sourced from ERS calculations, based on average prices from The Bureau of Labor Statistics and USDA Agricultural Marketing Service Data, as reported by the USDA, July 2015

How good do they actually taste?

Pulses can be prepared countless ways and are delicious as well as nutritious, which is why many of the country's top chefs have begun including them in recipes from smoothies and ice cream to main dishes.

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DRY PEAS



BEANS



LENTILS



CHICKPEAS

Why are they considered a superfood?

Pulses are nutritional powerhouses, loaded with protein, fiber, vitamins and minerals. They've also been shown to lower the risk of heart disease and diabetes, lower blood pressure and cholesterol, and help with weight loss. Gluten-free and vegetarian, they contain twice the protein of quinoa. Black beans contain 1.5 times the amount of iron as flank steak, and chickpeas have three times the folate (an essential B vitamin that helps prevent neural tube birth defects) as kale. Plus pulses are high in fiber—linked to weight loss and feeling fuller—and loaded with more antioxidants than blueberries or pomegranate juice. In fact, they're so nutrient-dense that nutritionists actually consider them both a protein and a vegetable at once.

Nutritional information sourced from the USDA Nutrient Database, antioxidant data as published in *Journal of Agricultural and Food Chemistry*, June 9, 2004; All nutritional figures based on ½ cup serving of cooked pulses

Why does the U.N. care about pulses?

Because they're good for the environment and can feed the world. Pulses have a lower carbon footprint than almost any other food group, are water-efficient (using just one-tenth of the water of other proteins), and enrich the soil where they grow, reducing the need for chemical fertilizers that contribute to greenhouse gases. Pulses—grown in developing countries as well as here in North America—will play a major role in meeting future food needs, since the world's growing population is set to require a 70% increase in agricultural production by 2050.

Water footprint figures sourced from Arjen Y. Hoekstra and Ashok Chapagain, *Globalization of Water*, U. of Twente, Waterfootprint.org as reported by National Geographic, April 2010

Carbon footprint data sourced from: Nijdam, D. Rood, T., Westhoek, H. The price of protein. *Food Policy* 2012, vol 37, issue 6, pages 760-770



For more information:

Visit www.pulses.org now and www.pulsepledge.com beginning January 1, 2016,

Nutrition

PULSES ARE:



Good source of protein

Lentils deliver **double the protein per serving of quinoa**

Excellent source of fiber

All pulses have **4x more fiber than brown rice**

High in antioxidants

Per serving, red kidney beans have **higher antioxidant content than blueberries and pomegranate juice**



Iron-rich

One serving of black beans contains **1.5 times as much iron as one 3 oz. serving of flank steak**

Good source of potassium

One serving of dry peas **contains as much potassium as a banana**

Excellent source of folate

Chickpeas contain **3x more folate per serving than kale**

✓ **Gluten-free** ✓ **Sodium-free** ✓ **Cholesterol-free**

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MEET PULSES:

The Health Powerhouses

Pulses, in technical terms, are the dry, edible seeds of plants in the legume family. In understandable terms, they're a category of superfoods that includes chickpeas, lentils, dry peas, and dry beans. They're incredibly healthy, which is one reason the United Nations declared 2016 as the International Year of Pulses.



Here's how pulses pack such a nutritional punch that they're considered both a protein and a vegetable:

- ✓ **Protein-packed:** They contain up to 9 grams of protein per ½ cup cooked serving—twice the protein of quinoa. And unlike many protein-rich foods, pulses are low in fat.
- ✓ **Beneficial for disease prevention:** Pulses have been shown to improve blood sugar control and reduce blood cholesterol and blood pressure, thus reducing the risk factors for heart disease and diabetes.
- ✓ **Good for dietary restrictions:** Being gluten-free and vegetarian makes them a good option for people with special diets, allergies or sensitivities.
- ✓ **Nutrients galore:** Pulses deliver high levels of potassium, magnesium, zinc, B vitamins and iron. One serving of black beans has 1.5 times the amount of iron as flank steak, plus three times the folate (an essential B vitamin) of kale, and as much potassium as a banana. Even more, red kidney beans are loaded with more antioxidants than blueberries or pomegranate juice.
- ✓ **High in fiber:** Pulses are high in both soluble and insoluble fiber, helping with staying regular, losing weight, and feeling fuller longer.
- ✓ **Smart source of folate:** Pulses are excellent sources of folate, a B vitamin important during pregnancy to reduce the risk for neural tube birth defects. Folate is also essential to brain development and function.



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Sustainability

PULSE CROPS ARE:



Natural fertilizers

Pulses enrich the soil where they grow, reducing the need for chemical fertilizers



Drought-tolerant and frost-hardy

Pulse crops can grow in harsh environments



Low carbon footprint

Pulse crops have one of the lowest carbon footprints of any food group

It takes **43 gallons** of water to produce 1 lb. of **pulses**



Water-efficient source of protein

Pulse crops require little or no irrigation



It takes roughly **800-1,800 gallons** of water to produce 1 lb. of **meat**

Water footprint figures sourced from Arjen Y. Hoekstra and Ashok Chapagain, Globalization of Water, U. of Twente, Waterfootprint.org as reported by National Geographic, April 2010

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MEET PULSES:

The Sustainable Superfoods

In technical terms, pulses are the dry, edible seeds of plants in the legume family. In understandable terms, they're a category of superfoods that includes chickpeas, lentils, dry peas, and beans. They're also incredibly sustainable, why is part of why the United Nations declared 2016 as the International Year of Pulses.

Here's why they're so earth-friendly:

Low carbon footprint

Greenhouse gas emissions from crop production are largely caused by nitrogen fertilizers. Pulses require less nitrogen fertilizers because they create their own fertilization by pulling nitrogen from the air and into the soil.

**Healthy soil**

Pulses support a healthy and diverse farm system. They enrich soil health by leaving behind nutrients including nitrogen and beneficial microbes for the next crop.

**Water-savvy**

Pulses use just one-tenth of the water of other proteins. For example, it takes only 43 gallons of water to produce 1 lb. of pulses compared to 800-1,800 gallons of water to produce the same amount of animal protein. Pulses extract water from a shallower depth, leaving more water deep in the soil for other crops, which makes them well-adapted for drought prone areas.

**Feeding the world**

North America is the leading producer of pulse crops in the world. Since the world's growing population will require a 70% increase in agricultural production by 2050, pulses' low carbon footprint and water and soil efficiency make them the ideal sustainable food of the future.



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Versatility

The Many Ways to Love Pulses:



Swap half the meat in nearly any recipe with lentils



Add cooked white beans or pea protein to smoothies, or try pulse flours to make gluten-free baked goods



Add chickpeas to pasta, or select one of the many pastas made with pulses



It takes the same time to prepare lentils and split peas as it takes to prepare pasta, quinoa or rice (15-30 minutes)

No time? Try canned or flash frozen pulses



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MEET PULSES:

The World's Most Versatile Superfood

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Here's why they're so adaptable:

Whole pulses stretch meals

In lasagna, tacos, casseroles, chili, or even meatballs, replacing half the meat with lentils will boost the fiber and nutrient content while reducing the cost, as well as sodium and fat. Or throw whole pulses, like chickpeas, into soups and salads to make them more filling and add plant-based protein and fiber.

Pulses taste great

Whether prepared savory or sweet, pulses have long been a staple in Europe, the Mediterranean, India, Latin America, the Middle East and North America. Their great taste is why many of the country's top chefs are now including them in everything from salads to smoothies.

Pulses know how to blend in

When pureed or turned into powders like chickpea flour or pea protein powder, pulses won't alter the flavor dramatically but will seriously boost the nutritional value, a boon for finicky eaters. Add pulses to dips or smoothies, or bake brownies and breads with a pulse flours, for a seamless, vegetarian, gluten-free way to get more protein and vitamins.

Endless pulse possibilities

The many varieties of pulses make them excellent pantry staples for home and professional chefs alike. Add cooked pulses to pastas or salads to boost protein and fiber, or use pulse purees for dense and moist baked goods. Or look for packaged goods—from breakfast cereals to chips—that include the added nutrients of pulses and pulse flours.



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Affordability and Food Security



The world's growing population will require a 70% increase in agricultural production by 2050



Over half of all global pulse production occurs in developing countries

- Pulses are a staple food around the world, playing a key role in many traditional cuisines

- Pulses enhance crop diversity, decreasing the risks farmers face from environmental and market fluctuations

U.S. cost per serving of lentils is \$0.10 vs.:



\$1.49
for beef



\$0.73
for pork



\$0.63
for chicken

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