

Quinoa

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Quinoa provides essential amino acids!

Most of the protein in Quinoa is found in the embryo. Quinoa, like casein, is considered a complete protein – containing all 10 essential amino acids. Quinoa has 78-93% the protein efficiency ratio (PER*) of casein when raw, and 102-105% when cooked!

Table 3. Essential amino acids in quinoa and other foods (g/100 g protein) (KOZIOI 1992)

	Quinoa	Maize	Rice	Wheat	Bean	Milk	FAO ^a
Histidine	3.2	2.6	2.1	2.0	3.1	2.7	2.6
Isoleucine	4.9	4.0	4.1	4.2	4.5	10.0	4.6
Leucine	6.6	12.5	8.2	6.8	8.1	6.5	9.3
Lysine	6.0	2.9	3.8	2.6	7.0	7.9	6.6
Methionine ^b	5.3	4.0	3.6	3.7	1.2	2.5	4.2
Phenylalanine ^c	6.9	8.6	10.5	8.2	5.4	1.4	7.2
Threonine	3.7	3.8	3.8	2.8	3.9	4.7	4.3
Tryptophan	0.9	0.7	1.1	1.2	1.1	1.4	1.7
Valline	4.5	5.0	6.1	4.4	5.0	7.0	5.5

^aas reported by KOZIOI (1992); ^bmethionine + cystine; ^c Phenylalanine + tyrosine; FAO – Food Agriculture Organization

*PER: An older method used since 1919 to evaluate protein quality

Did you know that Quinoa...

- Is a close relative with beets, amaranth and spinach!
- Has been helpful in reducing total serum cholesterol.
- Is not a true grain, it is a fruit!
- Is a great source of energy, protein, essential fats, and is loaded with vitamins and minerals!
- Is a great option for those following a gluten free diet!
- Can be eaten like any other hot cereal for breakfast!

Exploring Quinoa – The Inca’s ‘mother grain’

With the increased awareness, improved testing, and rise in gluten intolerance and celiac disease, grains (or in the case of quinoa, pseudo-grains) with nutrient dense properties are becoming more popular and more available in this country. Quinoa is a fruit that’s plant has the ability to germinate within hours of exposure to moisture. The quinoa seed is what is commonly consumed. Roughly 350 seeds equal 1 gram and they can grow in a variety of colors, often on the same bush! The quinoa plant is resilient and can be grown on a variety of soils and in varied acid/alkaline conditions as well as a range of temperatures (from -1 to 35 °C). The plant responds well to nitrogen rich soils, which also increases both seed production and protein.

Quinoa is packed with essential amino acids and fatty acids in addition to being a great source of vitamins like A, B₂, E, K and minerals like calcium, iron, zinc, and magnesium. The mineral content will

vary with the location of the plant and the soil nutrients of that plant. Additionally, some of the vitamins and minerals can be lost when rinsing the quinoa, but this is necessary to remove the protective coating, saponins, from the seed.

In a recent story by NPR, the recent popularity of quinoa has changed the lives of Bolivian farmers that grow it, however the popularity has increased costs, even in Bolivia, where quinoa is a valuable source of nutrients and is part of the government’s strategy to fight the malnutrition. Quinoa consumption has been looked at in children and animal models. Studies have used insulin like growth factor -1 (IGF-1) as a marker for quality protein intake and research has found significantly higher IGF-1 in the children eating quinoa twice a day. Therefore, like Bolivia, other countries where protein malnutrition is a risk, quinoa would be a valuable and versatile supplement.

Storage and Preparation

Because of Quinoa’s PUFA content, it must be stored in a cool place, and for long-term storage it must be placed in an airtight container. It is important to rinse the quinoa before use to remove the saponins, natural detergents coating the quinoa with a bitter taste. Most quinoa sold in the US have most of the saponins removed prior to sale, but it is still important to rinse the quinoa under running water until the soapy residue runs clear.



Recipe Idea!

- 2 teaspoons grated lime zest
- 2 tablespoons fresh lime juice
- 2 tablespoons unsalted butter, melted and cooled
- 1 tablespoon olive oil
- 1 cup quinoa
- 1 (14- to 15-ounce) can black beans, rinsed and drained
- 2 medium tomatoes, diced
- 4 scallions, chopped
- 1/4 cup chopped fresh cilantro

Whisk together lime zest and juice, butter, oil, 1/2 teaspoon salt, and 1/4teaspoon pepper in a large bowl. Wash quinoa in 3 changes of cold water in a bowl, draining in a sieve each time.

Cook quinoa in a medium pot of boiling salted water (1 tablespoon salt for 2 quarts water), uncovered, until almost tender, about 10 minutes. Drain in sieve, then set sieve in same pot with 1 inch of simmering water (water should not touch bottom of sieve). Cover quinoa with a folded kitchen towel, then cover sieve with a lid (don't worry if lid doesn't fit tightly) and steam over medium heat until tender, fluffy, and dry, about 10 minutes. Remove pot from heat and remove lid. Let stand, still covered with towel, 5 minutes.

Add quinoa to dressing and toss until dressing is absorbed, then stir in remaining ingredients and salt and pepper to taste.

Adapted from www.epicurious.com