



# ANCIENT GRAINS

## Consumption and milling trends

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**A**ncient grains have been feeding the public since the beginning of civilisation. However, they were largely ignored by Western countries, where selectively-refined grains provide an economic advantage.

That's changing nowadays; grains like quinoa, amaranth, farro, and spelt are growing in popularity with today's consumers because of their perceived health benefits, according to a new report from The NPD Research Group.

In an interview with Cali Amos, of Health Focus International, reports that half of consumers are interested in ancient grains, and "nearly 40 percent saying they use ancient grains at least once a week."

Furthermore, "of those consumers interested, more than 20 percent are willing to pay a premium for products including ancient grains." In the last decade, there has been a renewed interest in the ancient wheat varieties for producing high-value food products with enhanced health benefits.

Bread and breakfast cereals were the first foods into which ancient grains were incorporated and followed by pasta and noodles. The increasing demand for healthy and convenient foods

to be consumed on-the-go, resulted in snack bars, sweet biscuits and savory snacks capitalising on these trends.

There is no official definition for ancient grains. Whole Grains Council generally define ancient grains loosely as 'grains that are largely unchanged over the last several hundred years'. This means that modern wheat (constantly bred and changed) is not an ancient grain, while einkorn, emmer/farro, Kamut and spelt would be considered ancient grains in the wheat family.

Heirloom varieties of other common grains — such as black barley, red and black rice, blue corn — might also be considered ancient grains. Other grains largely ignored until recently by Western palates (such as sorghum, teff, millet, quinoa, amaranth) would also be widely considered to be ancient grains. Sometimes less common grains, like buckwheat, or wild rice, are also included in the list.

Ancient grains are a group of grains and pseudo cereals (seeds that are consumed like grains) that have remained mostly unchanged for thousands of years. They're dietary staples in many parts of the world such as China, India, Africa, and the Middle East, and today getting more popular every day in Western countries.

Sorghum is an ancient grain that widely used in gluten-free food applications. It is suitable for use in gluten-free breads and other baked products such as cakes and cookies. In Southern Africa,

farmers eat tannin-rich sorghum in order to gain the energy needed to sustain themselves for long period of time.

Teff is another one with small seeds that is grown mainly in a few regions of North Africa. A gluten-free grain with a mild flavor, teff is a healthy and versatile ingredient that can be used in a wide variety of products. Amaranth, a nutrient-rich pseudo cereal that contains significant amount of protein

Quinoa grains



Sorghum farms



and other nutrients, has been evaluated to identify chemical components that may be beneficial in the treatment and prevention of a variety of diseases and health problems.

The ancient Incan, Mayan, and Aztec civilisations consumed amaranth as part of their daily diets. The pseudo cereal quinoa is a plant native to the Andean region of Peru and Bolivia. Quinoa contains large amounts of polyphenols, fibers, proteins, fatty acids, and minerals. 2013 was the International Year of Quinoa and saw the continued growth of this pseudo grain.

Internationally, launches of quinoa products increased by more than 50 percent in 2013 and have had a remarkable rise in popularity, growing more than five-fold over the past five years. In 2014, quinoa moved into the mainstream and can now be found as whole grain, flaked and flour, as well as in breads, breakfast cereals, bars and even as a milk substitute.

Ancient grains are full of fibre and protein containing healthy fats, calcium, iron and other micronutrients. They are also a good source of vitamins and minerals. On the other hand, there are also arguments that bioavailability studies are needed to back up ancient grain health benefits.

Processing of ancient grains is important since it potentially may affect their nutritional value as well as taste. As the first stage of processing, milling of ancient grains has utmost importance since distributions of nutrients show wide variation among the milled products.



As an example, a research study done in India on evaluation of roller milling potential of amaranth grains showed that conditioning moisture influenced the milled products yield and composition and milled products showed unique nutritive composition and functional properties.

Likewise, soaking the quinoa grains removes the saponins which give a slightly bitter taste to the products. Furthermore, ancient grains can be challenging for bakers since they may require special formulation and processing conditions to avoid inferior product quality in terms of volume, texture, taste as well as staling characteristics. We need to focus on more research and development studies including their milling and potential baking characteristics, in order to make people globally benefit of the unique attributes of ancient grains.

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