

# Amaranth was first cultivated around 8,000 years ago.



Aztec man harvesting amaranth

## Early Cultivation

Amaranth was first cultivated for its protein and nutrient rich seeds and edible leaves around 8000 years ago in Mexico. It was a major food crop of the pre-Hispanic Aztecs, who called it *huautli*. It likely supplied up to 80% of their energy consumption and, being so important, it was one of the required tributes paid to their rulers.

Amaranth was also integral to Aztec religious ceremonies. For example, to pay homage to their gods, statues were made with a dough called *tzoalli* of popped amaranth seeds mixed with agave syrup. These idols were worshipped, then broken apart and distributed to the faithful to eat. Leaves also had their place in ceremonial meals. They were used in the tamales offered to the dead at the feast of *Huaquiltamalculitzli*, meaning “the meal of the amaranth tamales.”

## Spanish Colonization

Upon defeating the Aztecs in 1521, Spanish conquerors destroyed the amaranth crops and banned its further cultivation in order to subdue the population, restrict their customs, and convert them to Christianity. It couldn't be wiped out completely, however, as wild populations persisted and people in remote areas continued to grow it.



## Research and Revival

Amaranth never regained its status as a dominant staple crop, but it is still grown and featured in Mexican and Central American cuisine today. A typical Mexican confection of popped amaranth seeds mixed with sugar syrup or honey, called *Alegría* or “Joy,” harkens back to ancient times.



Native South American amaranth was grown and consumed by the ancient Incas of Peru. There, where it is called *kiwicha*, it is still grown today. Popped seeds are mixed with molasses to make treats called *turrone* and it is eaten as a breakfast porridge.

Research in the 1970s sparked interest in amaranth beyond its native lands, especially since it can be grown successively with minimal water on poorer soils.

# Chia was first used as food around 5,000 years ago.

## Early Cultivation

Chia seeds were first used as food around 5,000 years ago by indigenous people of Mexico and Central America. In the language of the ancient Mayans of that region, *chia* meant “strength.” By the time of the pre-Hispanic Aztecs of Mexico during the 14–16th centuries, chia was well established as a staple crop as important as maize, and large areas of agricultural land were devoted to its cultivation.



Aztecs used both whole seeds and ground flour for culinary purposes. For example, flour made of roasted seeds, known as *chianpinolli*, was mixed with corn flour and water to make a porridge called *pinole*, which was also fashioned into cakes cooked over open fires.



Chia flour was also an ingredient in beverages called *chianatoles*, which were mainstays of festivals and ceremonies. Being an important commodity, seeds were a required tribute paid to Aztec rulers.

Aztec woman with chia plant (above)  
Grinding chia seeds (below)



## Spanish Colonization

With Spanish colonization and the importation of foreign grains, cultivation and traditional uses of chia plummeted. However, a new refreshing drink of whole chia seeds mixed with water, lemon juice and sugar, called *chia fresca*, became popular around 1600 and continues to be enjoyed in Mexico today.



## Research and Revival

Research on the nutritional value of chia began in earnest during the 1990s. Since then, it has been gaining popularity worldwide, with annual sales expected to soon reach more than 2 billion dollars.



The Tarahumara, indigenous people of northwestern Mexico, are renowned for their ability to run long distances. They make a high-energy drink from chia seeds, called *iskiata*.

# Quinoa was first cultivated between 3-5,000 years ago.



## Early Cultivation

Quinoa was first brought into cultivation between 3,000-5,000 years ago in the Lake Titicaca region of Peru and Bolivia. Its protein and nutrient rich seeds were a staple crop of the Incas, whose empire capped thousands of years of pre-Hispanic Andean civilization.

The Incas deemed quinoa sacred and called it *Chisya mama*, “Mother of all Grains.” In reverence, their emperor sowed the first seeds of the season with golden implements. In addition to its every day domestic consumption, Incan armies were sustained on their marches by a mixture of quinoa and fat called “war balls.”

An alcoholic beverage, called *chicha blanca*, was also made with quinoa. It was consumed during Incan religious rituals and it remains a popular drink today.



With thousands of varieties having wide genetic variation, quinoa can grow in diverse climates and terrains. It can survive in an extreme range of temperatures from 25-100 degrees F, even with low rainfall and nutrient poor soil.



## Spanish Colonization

Because of quinoa’s nutritional and spiritual importance, the Spanish banned the growing of the crop as a means of subjugation upon their defeat of the Incas in 1533. They mandated the growing of imported wheat instead. Pockets of cultivation, however, persisted in remote areas and eventually quinoa was revived regionally as a staple crop.

## Research and Revival

Worldwide interest in quinoa developed in the 1980s, and since then cultivation has spread beyond South America. In 1993, NASA selected it as an experimental crop in its Controlled Ecological Support System for long-duration manned space flights. The United Nations declared 2013 the “International Year of Quinoa” for its potential to contribute to world food security and in recognition of the indigenous peoples of the Andes, who preserved it as a staple for present and future generations.

