

Quinoa (*kinwa*), a species of goosefoot (*Chenopodium*), originated in the Andean region of Ecuador, Bolivia, Colombia and Peru, where it was successfully domesticated 3,000 to 4,000 years ago for human consumption, though archaeological evidence shows a non-domesticated association with pastoral herding some 5,200 to 7,000 years ago. It is a grain crop grown primarily for its edible seeds and it is not a member of the true grass family. As a chenopod, quinoa is closely related to species such as beetroots, spinach and tumbleweeds.

Quinoa was important to the diet of pre-Columbian Andean civilizations, called a super-food. Protein content is very high for a cereal/pseudo-cereal (14% by mass), yet not as high as most beans and legumes. Quinoa's protein content per 100 calories is higher than brown rice, potatoes, barley and millet, but is less than wild rice and oats. It is a good source of dietary fiber and phosphorus and is high in magnesium and iron. Quinoa is also a source of **calcium**, and thus is useful for **vegans** and those who are **lactose intolerant**. Quinoa is gluten-free and considered easy to digest. Because of all these characteristics, quinoa is being considered a possible crop in NASA's Controlled Ecological Life Support System for long-duration human occupied spaceflights.

Germination activates its natural enzymes and multiplies its vitamin content. Quinoa has a notably short germination period: Only 2–4 hours resting in a glass of clean water is enough to make it sprout and release gases, as opposed to, e.g., 12 hours with wheat. This process, besides its nutritional enhancements, softens the seeds, making them suitable to be added to salads and other cold foods.

After harvest, the seeds must be processed to remove the coating containing the bitter-tasting saponins. Quinoa seeds are in general cooked the same way as rice and can be used in a wide range of dishes. Most quinoa sold commercially in North America has been processed to remove this coating. This bitterness has beneficial effects during cultivation, as the plant is unpopular with birds and therefore requires minimal protection. In South America, quinoa saponin has many uses outside of consumption as a food, including as a detergent for clothing and washing and as an antiseptic for skin injuries.

Quinoa is grown from coastal regions (Chile) to over 4,000 m (13,000 ft) in the Andes near the equator, between 8,200 ft and 13,000 ft. Optimal for quinoa growth is well-distributed rainfall during early growth and development and dry conditions during seed maturation and harvesting. Quinoa has been cultivated in the United States, primarily in the high elevation San Luis Valley (SLV) of Colorado where it was introduced in 1982. Quinoa is usually harvested by hand and rarely by machine, because the extreme variability of the maturity period of native quinoas complicates mechanization. Harvest needs to be precisely timed to avoid high seed losses from shattering, and different panicles on the same plant mature at different times.

Quinoa has become increasingly popular in the United States, Canada, Europe, China and Japan where the crop is not typically grown, increasing crop value. Between 2006 and early 2013 quinoa crop prices have tripled. In Lima, Peru, it sells at a higher per pound price than chicken, and four times as much as rice." The United Nations General Assembly declared 2013 as the "**International Year of Quinoa**" in recognition of ancestral practices of the Andean people, who have preserved quinoa as food for present and future generations, through knowledge and practices of living in harmony with nature. The objective is to draw the world's attention to the role that quinoa plays in providing food security, nutrition and poverty eradication, in support of achieving Millennium Development Goals.