


# Amaranth

<i>Amaranthus</i>	
	
<i>Amaranthus caudatus</i>	
Scientific classification	
Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Core eudicots
Order:	Caryophyllales
Family:	Amaranthaceae
Subfamily:	Amaranthoideae
Genus:	<i><b>Amaranthus</b></i> L.
Species	
See text.	

*Amaranthus*, collectively known as **amaranth**,<sup>[*citation needed*]</sup> is a cosmopolitan genus of annual or short-lived perennial plants. Catkin-like cymes of densely packed flowers grow in summer or autumn. Approximately 60 species are recognized, with inflorescences and foliage ranging from purple and red to green or gold. Members of this genus share many characteristics and uses with members of the closely related genus *Celosia*.

Although several species are often considered weeds, people around the world value amaranths as leaf vegetables, cereals, and ornamental plants.

"Amaranth" derives from Greek ἀμάραντος<sup>[1]</sup> (*amarantos*), "unfading," with the Greek word for "flower," ἄνθος (*anthos*), factoring into the word's development as "amaranth." The more accurate "amarant" is an archaic variant.

## Taxonomy

*Amaranthus* shows a wide variety of morphological diversity among and even within certain species. Although the family (Amaranthaceae) is distinctive, the genus has few distinguishing characters among the 70 species included. This complicates taxonomy and *Amaranthus* has generally been considered among systematists as a "difficult" genus.

Formerly, Sauer (1955) classified the genus into two subgenera, differentiating only between monoecious and dioecious species: *Acnida* (L.) Aellen ex K.R. Robertson and *Amaranthus*. Although this classification was widely accepted, further infrageneric classification was (and still is) needed to differentiate this widely diverse group.

Currently, *Amaranthus* includes three recognized subgenera and 70 species, although species numbers are questionable due to hybridization and species concepts.<sup>[2]</sup> Infrageneric classification focuses on inflorescence, flower characters and whether a species is monoecious/dioecious, as in the Sauer (1955) suggested classification. A modified infrageneric classification of *Amaranthus* was published by Mosyakin & Robertson (1996) and includes three subgenera: *Acnida*, *Amaranthus*, and *Albersia*. The taxonomy is further differentiated by sections within each of the subgenera.



Skull shapes made of amaranth and honey for Day of the Dead in Mexico

## Species

Species include:<sup>[3]</sup>

- *Amaranthus acanthochiton* – greenstripe
- *Amaranthus acutilobus* – is a synonym of *Amaranthus viridis*
- *Amaranthus albus* – white pigweed, prostrate pigweed, pigweed amaranth
- *Amaranthus arenicola* – sandhill amaranth
- *Amaranthus australis* – southern amaranth
- *Amaranthus bigelovii* – Bigelow's amaranth
- *Amaranthus blitoides* – mat amaranth, prostrate amaranth, prostrate pigweed
- *Amaranthus blitum* – purple amaranth
- *Amaranthus brownii* – Brown's amaranth
- *Amaranthus californicus* – California amaranth, California pigweed
- *Amaranthus cannabinus* – tidal-marsh amaranth
- *Amaranthus caudatus* – love-lies-bleeding, pendant amaranth, tassel flower, *quilete*
- *Amaranthus chihuahuensis* – Chihuahuan amaranth
- *Amaranthus crassipes* – spreading amaranth
- *Amaranthus crispus* – crispleaf amaranth
- *Amaranthus cruentus* – purple amaranth, red amaranth, Mexican grain amaranth
- *Amaranthus deflexus* – large-fruit amaranth
- *Amaranthus dubius* – spleen amaranth, *khada sag*
- *Amaranthus fimbriatus* – fringed amaranth, fringed pigweed
- *Amaranthus floridanus* – Florida amaranth
- *Amaranthus graecizans*
- *Amaranthus greggii* – Gregg's amaranth
- *Amaranthus hybridus* – smooth amaranth, smooth pigweed, red amaranth
- *Amaranthus hypochondriacus* – Prince-of-Wales feather, prince's feather
- *Amaranthus interruptus* – Australian amaranth

- *Amaranthus minimus*
- *Amaranthus muricatus* – African amaranth
- *Amaranthus obcordatus* – Trans-Pecos amaranth
- *Amaranthus palmeri* – Palmer's amaranth, Palmer pigweed, careless weed
- *Amaranthus polygonoides* – tropical amaranth
- *Amaranthus powellii* – green amaranth, Powell amaranth, Powell pigweed
- *Amaranthus pringlei* – Pringle's amaranth
- *Amaranthus pumilus* – seaside amaranth
- *Amaranthus retroflexus* – red-root amaranth, redroot pigweed, common amaranth
- *Amaranthus scleropoides* – bone-bract amaranth
- *Amaranthus spinosus* – spiny amaranth, prickly amaranth, thorny amaranth
- *Amaranthus standleyanus*
- *Amaranthus thunbergii* – Thunberg's amaranth
- *Amaranthus torreyi* – Torrey's amaranth
- *Amaranthus tricolor* – Joseph's-coat
- *Amaranthus tuberculatus* – rough-fruit amaranth, tall waterhemp
- *Amaranthus viridis* – slender amaranth, green amaranth
- *Amaranthus watsonii* – Watson's amaranth
- *Amaranthus wrightii* – Wright's amaranth

## Human uses

### Amaranth, uncooked

Nutritional value per 100 g (3.5 oz)	
<b>Energy</b>	1,554 kJ (371 kcal)
<b>Carbohydrates</b>	65.25 g
- Starch	57.27 g
- Sugars	1.69 g
- Dietary fiber	6.7 g
<b>Fat</b>	7.02 g
- saturated	1.459 g
- monounsaturated	1.685 g
- polyunsaturated	2.778 g
<b>Protein</b>	13.56 g
- Tryptophan	0.181 g
- Threonine	0.558 g
- Isoleucine	0.582 g
- Leucine	0.879 g
- Lysine	0.747 g
- Methionine	0.226 g
- Cystine	0.191 g
- Phenylalanine	0.542 g

- Tyrosine	0.329 g
- Valine	0.679 g
- Arginine	1.060 g
- Histidine	0.389 g
- Alanine	0.799 g
- Aspartic acid	1.261 g
- Glutamic acid	2.259 g
- Glycine	1.636 g
- Proline	0.698 g
- Serine	1.148 g
Thiamine (vit. B <sub>1</sub> )	0.116 mg (10%)
Riboflavin (vit. B <sub>2</sub> )	0.2 mg (17%)
Niacin (vit. B <sub>3</sub> )	0.923 mg (6%)
Pantothenic acid (B <sub>5</sub> )	1.457 mg (29%)
Vitamin B <sub>6</sub>	0.591 mg (45%)
Folate (vit. B <sub>9</sub> )	82 µg (21%)
Vitamin C	4.2 mg (5%)
Vitamin E	1.19 mg (8%)
Calcium	159 mg (16%)
Iron	7.61 mg (59%)
Magnesium	248 mg (70%)
Manganese	3.333 mg (159%)
Phosphorus	557 mg (80%)
Potassium	508 mg (11%)
Sodium	4 mg (0%)
Zinc	2.87 mg (30%)
Link to USDA Database entry <sup>[4]</sup> Percentages are roughly approximated using US recommendations for adults. Source: USDA Nutrient Database <sup>[5]</sup>	

## Amaranth seed

Several species are raised for amaranth "grain" in Asia and the Americas. This should more correctly be termed "pseudograin" (see below).

Ancient amaranth grains still used to this day include the three species, *Amaranthus caudatus*, *Amaranthus cruentus*, and *Amaranthus hypochondriacus*.<sup>[6]</sup> Although amaranth was cultivated on a large scale in ancient Mexico, Guatemala, and Peru, nowadays it is only cultivated on a small scale there, along with India, China, Nepal, and other tropical countries; thus, there is potential for further cultivation in those countries, as well as in the U.S. In a 1977 article in *Science*, amaranth was described as "the crop of the future."<sup>[7]</sup> It has been proposed as an inexpensive native crop that could be cultivated by indigenous people in rural areas for several reasons:

1. It is easily harvested.

2. Its seeds are a good source of protein. Compared to other grains, amaranth is unusually rich in the essential amino acid lysine.

Common grains such as wheat and corn are comparatively rich in amino acids that amaranth lacks; thus, amaranth and other grains can complement each other.<sup>[8]</sup>

1. The seeds of *Amaranthus* species contain about thirty percent more protein than cereals like rice, sorghum and rye. In cooked and edible forms, amaranth is competitive with wheat germ and oats - higher in some nutrients, lower in others.
2. It is easy to cook. As befits its weedy life history, amaranth grains grow very rapidly and their large seedheads can weigh up to 1 kilogram and contain a half-million seeds in three species of amaranth.<sup>[1]</sup>

**Kiwicha**, as amaranth is known today in the Andes, was one of the staple foodstuffs of the Incas. Known to the Aztecs as **huautli**, it is thought to have represented up to 80% of their caloric consumption before the conquest. Another important use of amaranth throughout Mesoamerica was to prepare ritual drinks and foods. To this day, amaranth grains are toasted much like popcorn and mixed with honey, molasses or chocolate to make a treat called *alegría*, meaning "joy" in Spanish. Diego Duran described the festivities for Huitzilopochtli, a blue hummingbird god. (Real hummingbirds feed on amaranth flowers.) The Aztec month of Panquetzalitzli (7 December to 26 December) was dedicated to Huitzilopochtli. People decorated their homes and trees with paper flags; there were ritual races, processions, dances, songs, prayers, and finally human sacrifices. This was one of the more important Aztec festivals, and the people prepared for the whole month. They fasted or ate very little; a statue of the god was made out of amaranth (*huautli*) seeds and honey, and at the end of the month, it was cut into small pieces so everybody could eat a little piece of the god. After the Spanish conquest, cultivation of amaranth was outlawed, while some of the festivities were subsumed into the Christmas celebration.

Because of its importance as a symbol of indigenous culture, its gluten-free palatability, easy to cook, and its protein particularly well suited to human nutritional needs, interest in grain amaranth (especially *A. cruentus* and *A. hypochondriacus*) revived in the 1970s. It was recovered in Mexico from wild varieties and is now commercially cultivated. It is a popular snack sold in Mexico, sometimes mixed with chocolate or puffed rice, and its use has spread to Europe and parts of North America. Amaranth and quinoa are called pseudograins because of their flavor and cooking similarities to grains.

### **Amaranth seed flour**

Amaranth seed flour has been evaluated as an additive to wheat flour by food specialists. To determine palatability, different levels of amaranth grain flour were mixed with the wheat flour and baking ingredients (1% salt, 2.5% fat, 1.5% yeast, 10% sugar and 52–74% water), fermented, molded, pan-proved and baked. The baked products were evaluated for loaf volume, moisture content, color, odor, taste and texture. The amaranth containing products were then compared with bread made from 100% wheat flour. The loaf volume decreased by 40% and the moisture content increased from 22 to 42% with increase in amaranth grain flour. The study found that the sensory scores of the taste, odor color and texture decreased with increasing amounts of amaranth. Generally, above 15% amaranth grain flour, there were significant differences in the evaluated sensory qualities and the high amaranth-containing product was found to be of unacceptable palatability to the population sample that evaluated the baked products.

## Leaves, roots, and stems

Amaranth species are cultivated and consumed as a leaf vegetable in many parts of the world. There are four species of *Amaranthus* documented as cultivated vegetables in eastern Asia: *Amaranthus cruentus*, *Amaranthus blitum*, *Amaranthus dubius*, and *Amaranthus tricolor*.<sup>[9]</sup>

In Indonesia and Malaysia, leaf amaranth is called *bayam*. In the Philippines, the Ilocano word for the plant is "kalunay"; the Tagalog word for the plant is *kilitis* or "kulitis". In the state of Uttar Pradesh and Bihar in India, it is called Chaulai and is a popular green leafy vegetable (referred to in the class of vegetable preparations called saag). It is called Chua in Kumaun area of Uttarakhand, where it is a popular red-green vegetable. In Karnataka state in India, it is called Harive (ಹರಿ ವೆ). It is used to prepare curries like Hulee, palya, Majjigay-hulee and so on. In the state of Kerala, it is called 'Cheera' and is consumed by stir-frying the leaves with spices and red chillies to make 'Cheera Thoran'. In Tamil Nadu State, it is called மூளகைக் கீரಣ and is regularly consumed as a favourite dish, where the greens are steamed, and mashed, with light seasoning of salt, red chillis and cumin. It is called *keerai masial* (கீரணை மசியல்). In Andhra Pradesh this leaf is added in preparation of a popular dal called *thotakura pappu* తొట కూర పప్పు (Telugu). In Maharashtra, it is called "Shravani Maath" (literally माठ grown in month of *Shravan*) and it is available in both red and white colour. In Orissa, it is called "Khada saga", it is used to prepare 'Saga Bhaja', in which the leaf is fried with chillies and onions.

The root of mature amaranth is a popular vegetable. It is white and cooked with tomatoes or tamarind gravy. It has a milky taste and is alkaline.

In China, the leaves and stems are used as a stir-fry vegetable, or in soups, and called 苋菜 (Mandarin Pinyin: xiàncài; Cantonese Jyutping: jin6 coi3) with variations in various dialects). Amaranth greens are believed to help enhance eyesight.<sup>[citation needed]</sup> In Vietnam, it is called *rau dền* and is used to make soup. There are two species popular as edible vegetable in Vietnam: *dền đỏ*- *amaranthus tricolor* and *dền cỏm* or *dền trắng*- *amaranthus viridis*.

A traditional food plant in Africa, amaranth has the potential to improve nutrition, boost food security, foster rural development and support sustainable land care. In East Africa, amaranth leaf is known in Chewa as *bonongwe*, and in Swahili as *mchicha*, as *terere* in Kikuyu, Meru and Embu; and as *telele* in Kamba. In Bantu regions of Uganda it is known as *doodo*. It is recommended by some doctors for people having low red blood cell count. It is also known among the Kalenjin as a drought crop (*chepkerta*). In Lingala (spoken in the Congo), it is known as *ɛngalɛnga* or *bítɛkutɛku*. In Nigeria, it is a common vegetable and goes with all Nigerian starch dishes. It is known in Yoruba as *efo tete* or *arowo jeja* (meaning "we have money left over for fish"). In the Caribbean, the leaves are called *bhaji* in Trinidad and *callaloo* in Jamaica, and are stewed with onions, garlic and tomatoes, or sometimes used in a soup called pepperpot soup.

In Greece, green amaranth (*Amaranthus viridis*) is a popular dish and is called *vlita* or *vleeta*. It is boiled, then served with olive oil and vinegar like a salad, usually alongside fried fish. Greeks stop harvesting the plant (which usually grows wild) when it starts to bloom at the end of August.

In Sri Lanka, it is called "koora thampala". Sri Lankans cook it and eat it with rice. Fiji Indians call it *choraiya bhaji*.

## Dyes

The flowers of the 'Hopi Red Dye' amaranth were used by the Hopi (a tribe in the western United States) as the source of a deep red dye. There is also a synthetic dye that has been named "amaranth" for its similarity in color to the natural amaranth pigments known as betalains. This synthetic dye is also known as *Red No. 2* in North America and E123 in the European Union.<sup>[10]</sup>

## Ornamentals

The genus also contains several well-known ornamental plants, such as *Amaranthus caudatus* (love-lies-bleeding), a native of India and a vigorous, hardy annual with dark purplish flowers crowded in handsome drooping spikes. Another Indian annual, *A. hypochondriacus* (prince's feather), has deeply veined lance-shaped leaves, purple on the under face, and deep crimson flowers densely packed on erect spikes.

Amaranths are recorded as food plants for some Lepidoptera (butterfly and moth) species including the nutmeg moth and various case-bearer moths of the genus *Coleophora*: *C. amaranthella*, *C. enchorda* (feeds exclusively on *Amaranthus*), *C. immortalis* (feeds exclusively on *Amaranthus*), *C. lineapulvella* and *C. versurella* (recorded on *A. spinosus*).

## Nutritional value

**Amaranth greens**, also called Chau lai (Hindi) and Chu or Chua (Kumauni), **Chinese spinach**, **hinn choy** or **yin tsoi** (simplified Chinese: 苋菜; traditional Chinese: 莧菜; pinyin: *xiàncài*); **callaloo** in the Caribbean, **dhantinasoppu** (ದಂಟಿನ ಸೊಪ್ಪು) / **harive** (ಹರಿವೆ) (Kannada); తోటకూర (Telugu); **Rajgira** (राजगीरा) (Marathi); மாளகைக் கீரலை (Tamil); **cheera** ചീര (Malayalam); **bayam** (Indonesian); **phak khom** ผักโขม (Thai); **tampala**, or **quelite** (Oriya); **Khada Saga**, are a common leaf vegetable throughout the tropics and in many warm temperate regions.

Cooked amaranth leaves are a good source of vitamin A, vitamin C, and folate; they are also a complementing source of other vitamins such as thiamine, niacin, and riboflavin, plus some dietary minerals including calcium, iron, potassium, zinc, copper, and manganese. Cooked amaranth grains are a complementing source of thiamine, niacin, riboflavin, and folate, and dietary minerals including calcium, iron, magnesium, phosphorus, zinc, copper, and manganese - comparable to common grains such as wheat germ, oats and others.

Amaranth seeds contain lysine, an essential amino acid, limited in other grains or plant sources.<sup>[11]</sup> Most fruits and vegetables do not contain a complete set of amino acids, and thus different sources of protein must be used. Amaranth too is limited in some essential amino acids, such as leucine and threonine. Amaranth seeds are therefore promising complement to common grains such as wheat germ, oats, corn because these common grains are abundant sources of essential amino acids found to be limited in amaranth.

Amaranth may be a promising source of protein to those who are gluten sensitive, because unlike the protein found in grains such as wheat and rye, its protein does not contain gluten.<sup>[12]</sup> According to a 2007 report, amaranth compares well in nutrient content with gluten-free vegetarian options such as buckwheat, corn, millet, wild rice, oats and quinoa.

Several studies have shown that like oats, amaranth seed or oil may be of benefit for those with hypertension and cardiovascular disease; regular consumption reduces blood pressure and cholesterol levels, while improving antioxidant status and some immune parameters. While the active ingredient in oats appears to be water-soluble fiber, amaranth appears to lower cholesterol via its content of plant stanols and squalene.

Amaranth remains an active area of scientific research for both human nutritional needs and foraging applications. Over 100 scientific studies suggest a somewhat conflicting picture on possible anti-nutritional and toxic factors in amaranth, more so in some particular strains of amaranth. Lehmann, in a review article, identifies some of these reported anti-nutritional factors in amaranth to be phenolics, saponins, tannins, phytic acid, oxalates, protease

inhibitors, nitrates, polyphenols and phytohemagglutinins. Of these, oxalates and nitrates are of more concern when amaranth grain is used in foraging applications. Some studies suggest thermal processing of amaranth, particularly in moist environment, prior to its preparation in food and human consumption may be a promising way to reduce the adverse effects of amaranth's anti-nutritional and toxic factors.

## As a weed

Not all amaranth plants are cultivated. Most of the species from *Amaranthus* are summer annual weeds and are commonly referred to as pigweeds.<sup>[13]</sup> These species have an extended period of germination, rapid growth, and high rates of seed production, and have been causing problems for farmers since the mid-1990s. This is partially due to the reduction in tillage, reduction in herbicidal use and the evolution of herbicidal resistance in several species where herbicides have been applied more often.<sup>[14]</sup> The following 9 species of *Amaranthus* are considered invasive and noxious weeds in the U.S and Canada: *A. albus*, *A. blitoides*, *A. hybridus*, *A. palmeri*, *A. powellii*, *A. retroflexus*, *A. spinosus*, *A. tuberculatus*, and *A. viridis*.<sup>[15]</sup>

A new herbicide-resistant strain of *Amaranthus palmeri* has appeared; it is glyphosate-resistant and so cannot be killed by herbicides using the chemical. Also, this plant can survive in tough conditions. This could be of particular concern to cotton farmers using glyphosate-resistant cotton.<sup>[16]</sup> The species *Amaranthus palmeri* (Palmer amaranth) causes the greatest reduction in soybean yields and has the potential to reduce yields by 17-68% in field experiments. Palmer amaranth is among the "top five most troublesome weeds" in the southeast of the United States and has already evolved resistances to dinitroanilines and acetolactate synthase inhibitors.<sup>[17]</sup> This makes the proper identification of *Amaranthus* species at the seedling stage essential for agriculturalists. Proper weed control needs to be applied before the species successfully colonizes in the crop field and causes significant yield reductions.

## Beneficial weed

Pigweed can be a beneficial weed, as well as a companion plant, serving as a trap for leaf miners and some other pests, as well as sheltering ground beetles (which prey upon insect pests) and breaking up hard soil for more delicate neighboring plants.

## Seed saving

There are a multitude of varieties which cross with one another very easily. Even some species have been found to cross with one another e.g. *Amaranthus caudatus* and *Amaranthus hypochondriacus*. For most types, flowering occurs as the days become shorter.

Being wind-pollinated, they will cross with one another if less than 400 metres apart at flowering time. The seed heads mature gradually from bottom to top. Careful selection is needed every time a plant is chosen for seed. Inferior individuals should be rogued, or pulled out, before they can flower and pollinate better plants.

To maximise seed harvest, shake the near-mature seed heads into a paper bag or onto a canvas. If the growing area is large, it is faster to cut the heads all at once when most of the seeds are ripe. The fully ripened heads tend to drop their seeds.

Dry for a week and thresh the heads with gloved hands or feet on canvas as the chaff is somewhat prickly. The seeds may be lost when winnowing because the chaff and seeds are of similar size and the seeds are of a light weight. If you heap uncleaned seeds in a bowl and toss them, the light debris will concentrate on the top and can be blown away. Repeat this until only seeds remain.



## Myth, legend and poetry

The word **amaranth** comes from the Greek word *amaranton*, meaning "unwilting" (from the verb *marainesthai*, meaning "wilt"). The word was applied to amaranth because it did not soon fade and so symbolized immortality. "Amarant" is a more correct, albeit archaic form, chiefly used in poetry. The current spelling, *amaranth*, seems to have come from folk etymology that assumed the final syllable derived from the Greek word *anthos* ("flower"), common in botanical names.

An early Greek fable counted among Aesop's Fables compares the rose to the amaranth to illustrate the difference in fleeting and everlasting beauty:

An amaranth planted in a garden near a Rose-Tree, thus addressed it: "What a lovely flower is the Rose, a favorite alike with Gods and with men. I envy you your beauty and your perfume." The Rose replied, "I indeed, dear Amaranth, flourish but for a brief season! If no cruel hand pluck me from my stem, yet I must perish by an early doom. But thou art immortal and dost never fade, but bloomest for ever in renewed youth."<sup>[18]</sup>

In John Milton's epic *Paradise Lost* it is given a more fitting neighbour:

Immortal amarant, a flower which once  
 In paradise, fast by the tree of life,  
 Began to bloom; but soon for man's offence  
 To heaven removed, where first it grew, there grows,  
 And flowers aloft, shading the fount of life,  
 And where the river of bliss through midst of heaven  
 Rolls o'er elysian flowers her amber stream:  
 With these that never fade the spirits elect  
 Bind their resplendent locks. (III, 353)

Samuel Taylor Coleridge, in *Work Without Hope* (1825), also refers to the herb, likely referencing Milton's earlier work. (II 7-10 excerpted):

Yet well I ken the banks where Amaranths blow,  
 Have traced the fount whence streams of nectar flow.  
 Bloom, O ye Amaranths! bloom for whom ye may,  
 For me ye bloom not! Glide, rich streams, away!

Percy Bysshe Shelley refers to the herb in his poem "Bereavement" (Lines 13-16 excerpted):

Eternity points, in its amaranth bower  
 Where no clouds of fate o'er the sweet prospect lour,  
 Unspeakable pleasure, of goodness the dower,  
 When woe fades away like the mist of the heath.

In his dialogue "Aesop and Rhodopè", published in 1844, Walter Savage Landor wrote:

There are no fields of amaranth on this side of the grave:  
 there are no voices, O Rhodopè, that are not soon mute, however tuneful:  
 there is no name, with whatever emphasis of passionate love repeated,  
 of which the echo is not faint at last.

Joachim du Bellay mentioned the herb in his "A Vow To Heavenly Venus," ca. 1500.

We that with like hearts love, we lovers twain,

New wedded in the village by thy fane,  
 Lady of all chaste love, to thee it is  
 We bring these amaranths, these white lilies,  
 A sign, and sacrifice; may Love, we pray,  
 Like amaranthine flowers, feel no decay;  
 Like these cool lilies may our loves remain,  
 Perfect and pure, and know not any stain;  
 And be our hearts, from this thy holy hour,  
 Bound each to each, like flower to wedded flower.

In the fourth book of *Endymion*, John Keats writes:

The spirit culls  
 Unfaded amaranth, when wild it strays  
 Through the old garden-ground of boyish days.

In ancient Greece, the amaranth (also called chrysanthemum and helichrysum) was sacred to Ephesian Artemis. It was supposed to have special healing properties, and, as a symbol of immortality, was used to decorate images of the gods and tombs. In legend, Amarynthus (a form of *Amarantus*) was a hunter of Artemis and king of Euboea; in a village of Amarynthus, of which he was the eponymous hero, there was a famous temple of Artemis Amarynthia or Amarysia (Strabo x. 448; Pausan. i. 31, p. 5). It was also widely used by the Chinese for its healing chemicals, curing illnesses such as infections, rashes, and migraines. The "*Amarantos*" is the name of a several-century-old popular Greek folk song:

Look at the amaranth:  
 on tall mountains it grows,  
 on the very stones and rocks  
 and places inaccessible.

## Images



Loves-lies-bleeding (*Amaranthus caudatus*)



Green Amaranth (*A. hybridus*)



Seabeach amaranth (*A. pumilus*), an amaranth on the Federal Threatened species List



Red-root Amaranth (*A. retroflexus*) - from Thomé, *Flora von Deutschland, Österreich und der Schweiz* 1885



Spiny Amaranth (*Amaranthus spinosus*)



Green Amaranth (*Amaranthus viridis*)



Popping Amaranth (*Amaranthus* sp.)



Amaranth grain (left) and wheat (right)



Southern Kerala-style traditional Thoran made with *Cheera* (Amaranth) leaves



Example from Chilpancingo

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## External links

- Multilingual taxonomic information from the University of Melbourne (<http://www.plantnames.unimelb.edu.au/Sorting/Amaranthus.html>)
  - Grain amaranth, Crops For A Future (<http://www.cropsforthefuture.org/crop-of-the-week-archive/grain-amaranth-amaranthus-spp-amaranthaceae/>)
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