

## Chrysanthemum

Chrysanthemums (/krɪˈsænθəmz/ kriss-AN-th-mz), sometimes called mums or chrysanthi,[5] are flowering plants of the genus *Chrysanthemum* in the family Asteraceae.[4] They are native to East Asia and northeastern Europe. Most species originate from East Asia and the center of diversity is in China.[6] Countless horticultural varieties and cultivars exist.

The genus *Chrysanthemum* are perennial herbaceous flowering plants, sometimes subshrubs. The leaves are alternate, divided into leaflets and may be pinnatisect, lobed, or serrate (toothed) but rarely entire; they are connected to stalks with hairy bases.[7]

The compound inflorescence is an array of several flower heads, or sometimes a solitary head. The head has a base covered in layers of phyllaries. The simple row of ray florets is white, yellow, or red. The disc florets are yellow. Pollen grains are approximately 34 microns.[citation needed]

The fruit is a ribbed achene.[8][7]

The name "chrysanthemum" is derived from the Ancient Greek: χρυσός chrysos (gold) and Ancient Greek: ἄνθεμον anthemon (flower).[9][10]

The genus *Chrysanthemum* was first formally described by Linnaeus in 1753, with 14 species, and hence bears his name (L.) as the botanical authority.[11] The genus once included more species, but was split several decades ago[when?] into several genera, putting the economically important florist's chrysanthemums in the genus *Dendranthema*. The naming of these genera has been contentious, but a ruling of the International Botanical Congress in 1999 changed the defining species of the genus to *Chrysanthemum indicum*, restoring the florist's chrysanthemums to the genus *Chrysanthemum*. [citation needed]

Genera now separated from *Chrysanthemum* include *Argyranthemum*, *Glebionis*, *Leucanthemopsis*, *Leucanthemum*, *Rhodanthemum*, and *Tanacetum*.

As of February 2020[update], Plants of the World Online accepted the following species:[4]

Former species include:

Chrysanthemums start blooming in early autumn. This is also known as the favorite flower for the month of November.[12]

Chrysanthemums (Chinese: 菊花; pinyin: Júhuā) were first cultivated in China as a flowering herb as far back as the 15th century BC.[13] Over 500 cultivars had been recorded by 1630.[8] By 2014 it was estimated that there were over 20,000 cultivars in the world and about 7,000 cultivars in China.[14] The plant is renowned as one of the Four Gentlemen (四君子) in Chinese and East Asian Art. The plant is particularly significant during the Double Ninth Festival.[citation needed]

*Chrysanthemum* cultivation in Japan began during the Nara and Heian periods (early 8th to late 12th centuries), and gained popularity in the Edo period (early 17th to late 19th century). Many flower shapes, colours, and varieties were created. The way the flowers were grown

and shaped also developed, and chrysanthemum culture flourished. Various cultivars of chrysanthemums created in the Edo period were characterized by a remarkable variety of flower shapes, and were exported to China from the end of the Edo period, changing the way Chinese chrysanthemum cultivars were grown and their popularity.[15][16] In addition, from the Meiji period (late 19th to early 20th century), many cultivars with flowers over 20 cm (7.87 in) in diameter, called the Ogiku (lit., great chrysanthemum) style were created, which influenced the subsequent trend of chrysanthemums.[15] The Imperial Seal of Japan is a chrysanthemum and the institution of the monarchy is also called the Chrysanthemum Throne. A number of festivals and shows take place throughout Japan in autumn when the flowers bloom. Chrysanthemum Day (■■■■■, Kiku no Sekku) is one of the five ancient sacred festivals. It is celebrated on the 9th day of the 9th month. It was started in 910, when the imperial court held its first chrysanthemum show.[citation needed]

Chrysanthemums entered American horticulture in 1798 when Colonel John Stevens imported a cultivated variety known as 'Dark Purple' from England. The introduction was part of an effort to grow attractions within Elysian Fields in Hoboken, New Jersey.[17]

Modern cultivated chrysanthemums are showier than their wild relatives. Many horticultural specimens have been bred to bear many rows of ray florets in a great variety of colors. The flower heads occur in various forms, and can be daisy-like or decorative, like pompons or buttons. This genus contains many hybrids and thousands of cultivars developed for horticultural purposes. In addition to the traditional yellow, other colors are available, such as white, purple, and red. The most important hybrid is *Chrysanthemum* × *morifolium* (syn. *C. × grandiflorum*), derived primarily from *C. indicum*, but also involving other species.[citation needed]

Over 140 cultivars of chrysanthemum have gained the Royal Horticultural Society's Award of Garden Merit (confirmed 2017).[18]

In Japan, a form of bonsai chrysanthemum was developed over the centuries. The cultivated flower has a lifespan of about 5 years and can be kept in miniature size. Another method is to use pieces of dead wood and the flower grows over the back along the wood to give the illusion from the front that the miniature tree blooms.

Yellow or white chrysanthemum flowers of the species *C. morifolium* are boiled to make a tea in some parts of East Asia. The resulting beverage is known simply as chrysanthemum tea (■■■■■, pinyin: júhu■■ chá, in Chinese). In Korea, a rice wine flavored with chrysanthemum flowers is called gukhwaju (■■■■■).

Chrysanthemum leaves are steamed or boiled and used as greens, especially in Chinese cuisine. The flowers may be added to dishes such as mixian in broth, or thick snakemeat soup (■■■) to enhance the aroma. They are commonly used in hot pot and stir fries. Japanese cuisine sashimi uses small chrysanthemums as garnish.

Pyrethrum (*Chrysanthemum* [or *Tanacetum*] *cinerariaefolium*) is economically important as a natural source of insecticide. The flowers are pulverized, and the active components, called pyrethrins, which occur in the achenes, are extracted and sold in the form of an oleoresin. This is applied as a suspension in water or oil, or as a powder. Pyrethrins attack the nervous systems of all insects, and inhibit female mosquitoes from biting. In sublethal doses, they have an insect repellent effect.[citation needed] They are harmful to fish, but are far less toxic to mammals and birds than many synthetic insecticides. They are not persistent, being

biodegradable, and also decompose easily on exposure to light. Pyrethroids such as permethrin are synthetic insecticides based on natural pyrethrum. Despite this, chrysanthemum leaves are still a major host for destructive pests, such as leafminer flies including *L. trifolii*.<sup>[19]</sup>

Persian powder is an example of industrial product of chrysanthemum insecticide.

Chrysanthemum plants have been shown to reduce indoor air pollution by the NASA Clean Air Study.<sup>[20]</sup>

In some European countries (e.g., France, Belgium, Italy, Spain, Poland, Hungary, Croatia), incurved chrysanthemums symbolize death and are used only for funerals or on graves, while other types carry no such symbolism;<sup>[citation needed]</sup> similarly, in China, Japan, and Korea of East Asia, white chrysanthemums symbolize adversity, lamentation, and/or grief. In some other countries, they represent honesty.<sup>[better source needed]</sup><sup>[21]</sup> In the United States, the flower is usually regarded as positive and cheerful,<sup>[22]</sup> with New Orleans as a notable exception.<sup>[23]</sup>

In the Victorian language of flowers, the chrysanthemum had several meanings. The Chinese chrysanthemum meant cheerfulness, whereas the red chrysanthemum stood for "I Love", while the yellow chrysanthemum symbolized slighted love.<sup>[24]</sup> The chrysanthemum is also the flower of November.<sup>[25]</sup>

Chrysanthemums first arrived in Japan by way of China in the 5th century. The chrysanthemum has been used as a theme of waka (Japanese traditional poetry) since around the 10th century in the Heian period, and *Kokin Wakashū* is the most famous of them. In the 12th century, during the Kamakura period, when the Retired Emperor Go-Toba adopted it as the mon (family crest) of the Imperial family, it became a flower that symbolized autumn in Japan. During the Edo period from the 17th century to the 19th century, due to the development of economy and culture, the cultivation of chrysanthemums, cherry blossoms, Japanese iris, morning glory, etc. became popular, many cultivars were created and many chrysanthemum exhibitions were held. From the Meiji period in the latter half of the 19th century, due to the growing importance of the chrysanthemum, which symbolized the Imperial family, the creation of ogiku style cultivars with a diameter of 20 cm or more became popular.<sup>[32]</sup><sup>[15]</sup><sup>[33]</sup>

In the present day, each autumn there are chrysanthemum exhibitions at the Shinjuku Gyo-en, Meiji Shrine and Yasukuni Shrine in Tokyo. The Yasukuni Shrine, formerly a state-endowed shrine (■■■■■, *kankokuheisha*) has adopted the chrysanthemum crest.<sup>[34]</sup> Culinary-grade chrysanthemums are used to decorate food, and they remain a common motif for traditional Japanese arts like porcelain, lacquerware and kimono.<sup>[32]</sup>

Chrysanthemum growing is still practised actively as a hobby by many Japanese people who enter prize plants in contests.<sup>[32]</sup> Chrysanthemum "dolls", often depicting fictional characters from both traditional sources like kabuki and contemporary sources like Disney, are displayed throughout the fall months, and the city of Nihonmatsu hosts the "Nihonmatsu Chrysanthemum Dolls Exhibition" every autumn in historical ruin of Nihonmatsu Castle.<sup>[35]</sup> They are also grown into chrysanthemum bonsai forms.

Chrysanthemum crest on the battleship Mikasa

Maki-e Sake Ewer with Chrysanthemums and Paulownia Crests in Alternating Fields. early 17th century, Azuchi–Momoyama period.

Chrysanthemum shows have been traditionally held in many Japanese towns.

"Hirakata Chrysanthemum Dolls Exhibition" (2005)

Chrysanthemums in the Japanese Ogiku (lit., great chrysanthemum) style.

Korea has a number of flower shows that exhibit the chrysanthemum, such as the Masan Gagopa Chrysanthemum Festival.

Korean painting Chrysanthemums, Rock and Bird, 19th century

In Iran, chrysanthemums are associated with the Zoroastrian spiritual being Ashi Vanghuhi (lit. 'good blessings, rewards'), a female Yazad (angel) presiding over blessings.[38]

In 2017, Israel named a new fast-growing Chrysanthemum flower after Narendra Modi, the Prime Minister of India, in a special gesture to mark the first visit of an Indian prime minister to the Jewish nation.[39][40]

In Australia, on Mother's Day, which falls in May when the flower is in season, people traditionally wear a white chrysanthemum, or a similar white flower to honour their mothers. Chrysanthemums are often given as Mother's Day presents.[41]

Italian composer Giacomo Puccini wrote *Crisantemi* (1890), a movement for string quartet, in memory of his friend Amedeo di Savoia Duca d'Aosta. In Italy (and other European countries) the chrysanthemum is the flower that people traditionally bring to their deceased loved ones at the cemetery and is generally associated with mourning. A probable reason for this is the fact that the plant flowers between the end of October and the beginning of November, coinciding with the Day of the Dead (2 November).

Chrysanthemums are placed on graves to honor the dead during All Saints' Day and All Souls' Day in Poland.[47]

The UK National Collection of hardy chrysanthemums is at Hill Close Gardens near Warwick.[48]

Bud of a garden chrysanthemum

Chrysanthemum × morifolium 'Tokyo'

Purple Chrysanthemum

pink Chrysanthemum × morifolium

Red chrysanthemum

Closeup view of White Chrysanthemum

Chrysanthemum × morifolium 'Vesuvius'

Chrysanthemum zawadskii

Chrysanthemum indicum

Chrysanthemum japonense var. ashizuriense

A peach coloured chrysanthemum

Tiger Tail chrysanthemum

Leaves of chrysanthemum plant

A chrysanthemum show

Yellow Chrysanthemum.

Purple Chrysanthemum

