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Mums the Word for Fall Color

No perennial garden flower adds more color to the fall season than chrysanthemum (or mum, for short). It is one of the very few flowers that starts its bloom season late in the year, providing for color into and beyond the first frost of fall. Over the years, plant breeders have developed this popular flower to the point it now is available in a myriad of colors, flower types, and bloom dates. September signals the start of chrysanthemum season when mature, potted plants are available for fall decoration and/or planting into the garden.

The word chrysanthemum is derived from the Greek words chrysos (gold) and anthemion (flower). It is the common name given to *Dentranthema x grandiflorum*. Until about a decade ago this plant was classified in the genus *Chrysanthemum*; hence the origin of its common name. Chrysanthemum is an example of a 'cultigen'. The latter term is given to plants whose origin or selection is due primarily to human activity, oppose to having been developed in the wild.

Genetically, chrysanthemums are hexaploids and contain six sets of chromosome instead of the ordinary two. This makes them highly sterile and less competitive from the standpoint of establishing populations in the wild. It also helps to explain the differences that exist between different cultivars' ability to thrive under certain environmental conditions. Formerly known as hardy chrysanthemum, this designation has been abandoned (more or less) in favor of garden chrysanthemum because of the varying ability of different cultivars to withstand cold temperatures.

The first chrysanthemums probably were cultivated in China as many as 2000 years ago. There it was used for its ornamental as well as its medicinal value. The roots of the plant were boiled by people in ancient times to produce a tea used to treat headache. Additionally, young shoots and petals were consumed in salads and the leaves of mums

were brewed to produce a festive drink. The Chinese name for chrysanthemum is "Chu" and the modern Chinese city of Chu-Hsien was named in honor of the plant.

From China, chrysanthemum migrated to Japan around the 8th century A.D. where it quickly captured the fancy of the Japanese people. Their fondness of it caused them to adopt a single flowered chrysanthemum as the crest and official seal of the Emperor. Prominent Japanese families also included it on their family crests, and one of the highest orders of chivalry in Japan is the Imperial Order of the Chrysanthemum. The people of Japan observe a National Chrysanthemum Day which is called locally the Festival of Happiness. This represents quite a contrast with the attitude of many Europeans who consider chrysanthemum the "death flower" since in countries such as Austria and Belgium it is used primarily for grave decoration.

Modern chrysanthemum would hardly be recognized by ancient growers since most cultivars today are much showier than the single daisies that were first grown in the Orient. Chrysanthemum is a member of the Asteraceae (Composite) family whose members bear an indeterminate compound inflorescence known as a head which bear two types of florets: ray and disc. Ray florets typically are quite showy and would be what some mistakenly refer to as the petals of the compound flower whereas disk florets

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are smaller and, oft-times, inconspicuous.

Chrysanthemums are short-day (long night) plants that require long periods of darkness each day for flower induction and development. The critical photoperiod for flowering varies with cultivar. However, in nature, most cultivars of garden chrysanthemums are induced to bloom in mid- to late summer. Response time (until flowering) after photoinduction also varies with cultivar and according to temperature. Much attention by plant breeders has been focused on shortening the response time, resulting in cultivars which now bloom in early September only six weeks after photoinduction. Given many of the older cultivars require eight or nine weeks response time, we now have the prospect of having garden chrysanthemums in bloom from early September through October (or beyond).

Garden chrysanthemums are available in the spring as rooted cuttings established in small containers or during the fall as large, mature plants in or near full-bloom. Select a planting site that is well-drained and receives at least eight hours of sun. Chrysanthemums should be planted away from stray light that would prevent them from blooming in the fall. When planting smaller plants in the spring, be sure to space them far enough apart to allow for the future growth and development of the plant. For most cultivars this would be between 18 and 24 inches between plants; spacing 30 to 36 inches apart is preferred for more vigorous cultivars. Apply a granular fertilizer such as 5-10-5 (or equivalent) at the rate of two or three pounds per 100 square feet of surface area and incorporate it into the soil. A soluble starter fertilizer high in phosphorus (e.g. 15-30-15) applied immediately following transplanting also is beneficial.

Spring planted garden chrysanthemums should be pinched at regular intervals (every three to four weeks) to promote bushy, compact growth and more numerous flowers. For most cultivars, the last pinch should be made no later than mid- to late July to prevent the removal of flower buds which might have formed in response to photoperiod. As with other garden plants, garden chrysanthemums require about an inch and a half of water per week during the growing season. Mulching plants with materials such as bark, wood chips, or other organic materials will help to conserve moisture and also control weeds. Fortunately, garden chrysanthemums are relatively insect and disease free. Aphids, two-spotted mite and powdery mildew are the three main pest problems that should be monitored.

An alternative to planting garden chrysanthemums in the spring is to purchase mature plants in large containers

which are readily available beginning late August to early September. This method allows the enjoyment of other flowering plants during the growing season to be replaced by mature chrysanthemums just beginning their dazzling display of color as the other plants fade. Select plants that are just starting to show color for greatest longevity in the garden and plant so the surface of the growing medium in which the plant is growing is even with the soil after planting and watering.

Most chrysanthemums produced for fall sale are grown in a soilless growing medium high in organic matter. When these plants are planted directly into heavy garden soils that have not been improved, the difference between the two root environments often prevents good establishment. The latter frequently results in winter kill. Therefore, winter protection (mulch) the first winter following planting is recommended.

In addition to improving the soil before planting a mature chrysanthemum into the garden, proper watering is critical. It is important to remember that all of the roots nourishing the mature plant immediately after transplanting are contained in the potting medium in which the plant had been growing, which tends to dry faster than normal garden soil. Plants should be watered regularly so as to wet the root ball contained by the pot until roots have had time to establish themselves in the neighboring soil.

There are scores of different cultivars of garden chrysanthemums from which to choose today. Each year, new cultivars with improved growth habit, flower color and garden performance are added to the list. A relative newcomer to the scene has been the Belgium or European garden chrysanthemums. These cultivars are known for plants with spectacular size and display of color. Although individual flowers are smaller than normal, they are borne in great abundance making for quite a show in the garden.

Readers should be warned that growing garden chrysanthemums can be somewhat addictive. They are easy to grow, available in a wide array of flower types and colors and extend garden color well into the fall. For those who want to discuss their addiction with others, The National Chrysanthemum Society has 35 chapters across the nation. For more information visit the Society's web site at: www.mums.org.

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October Gardening Calendar

Ornamentals

- **Weeks 1-4:** Continue watering, especially evergreens if soils are dry.
- **Weeks 1-4:** Nuts or seeds of woody plants usually require exposure to 3 months cold before sprouting. This may be provided by outdoor planting in fall or “stratifying” in an unsealed bag of damp peat moss placed in the refrigerator.
- **Weeks 1-4:** Container grown and B & B trees and shrubs can be planted. Loosen the soil in an area 5 times the diameter of the root ball before planting. Mulch well after watering.
- **Weeks 1-4:** Plant spring bulbs among hostas, ferns, daylilies or ground covers. As these plants grow in the spring they will hide the dying bulb foliage.
- **Weeks 1-2:** For best bloom later this winter, Christmas cactus, potted azaleas and kalanchoe may be left outdoors until night temperatures drop to about 40 degrees Fahrenheit.
- **Weeks 2-4:** Spring bulbs for forcing can be potted up now and stored in a cool, frost-free place until it is time to bring indoors, usually 12 to 15 weeks.
- **Weeks 2-3:** Cannas and dahlias can be dug when frost nips their foliage. Allow the plants to dry under cover in an airy, frost-free place before storage.
- **Weeks 3-4:** Transplant deciduous trees once they have dropped their leaves.
- **Week 4:** Plant tulips now.
- **Week 4:** Trees may be fertilized now. This is best done following soil test guidelines.

Lawns

- **Weeks 1-2:** Seeding should be finished by October 15.
- **Weeks 2-3:** Broadleaf herbicides can be applied now to control cool season weeds such as chickweed and dandelion.
- **Weeks 3-4:** Continue mowing lawns until growth stops.
- **Weeks 3-4:** Keep leaves raked off lawns to prevent smothering grass.
- **Weeks 3-4:** Now is a good time to apply lime if soil tests indicate the need.
- **Week 4:** Winterize lawn mowers before storage.

Vegetables

- **Weeks 1-4:** Sow cover crops such as winter rye after crops are harvested.
- **Weeks 1-2:** Harvest winter squash and pumpkins before frost. For best storage quality, leave an inch or two of stem on each fruit.
- **Weeks 1-2:** Dig sweet potatoes before a bad freeze.
- **Weeks 1-4:** Gourds should be harvested when their shells become hard or when their color changes from green to brown.
- **Weeks 1-4:** A few degrees of frost protection may be gained by covering tender plants with sheets or light-weight fabric row covers.
- **Weeks 1-4:** Continue harvesting tender crops before frost.
- **Weeks 1-4:** The average first frost usually arrives about October 15-20.

Fruits

- **Weeks 1-4:** Store apples in a cool basement in old plastic sacks that have been perforated for good air circulation.
- **Week 1:** Fall color season begins.
- **Weeks 2-3:** Persimmons start to ripen, especially after frost.
- **Weeks 3-4:** Monitor fruit plantings for mouse activity and take steps for their control if present.
- **Week 3:** Begin peak fall color in maples, hickories and oaks.
- **Week 4:** Place wire guards around trunks of young fruit trees for protection against mice and rabbits.
- **Week 4:** End of peak fall color.

Gardening Calendar supplied by the staff of the William T. Kemper Center for Home Gardening located at the Missouri Botanical Garden in St. Louis, Missouri. (www.GardeningHelp.org)