



URI COLLEGE OF THE ENVIRONMENT AND LIFE SCIENCES (CELS) OUTREACH CENTER

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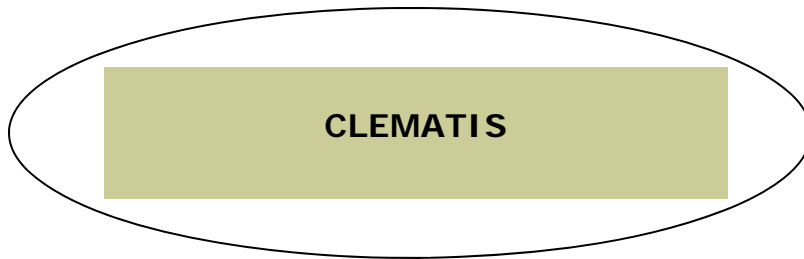
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Websites:

URI Master Gardener Association
www.urimga.org

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CLEMATIS

Clematis is a genus includes approximately 250 species and numerous garden hybrids. It is a varied genus, made up of mostly woody, deciduous climbing plants, though a few are evergreen and a few herbaceous. There is great variety in flower form, color, bloom season, foliage effect and plant height. Leaves are opposite on the stem and mostly compound with three to five leaflets. The leaf stalk twines like a tendril and is responsible for giving the plant support. The flowers are showy, with four (sometimes five to eight) petal-like sepals (no true petals) in numerous colors and shades. There are three general flower forms: small white flowers in panicles or loose and irregular spreading clusters, bell or urn-shaped flowers, and flat or open flowers. The fruit is a ball shaped, "feathered" structure. The one fault of clematis is that they are not attractive during winter, when they are a tangle of bare stems.

Clematis are hardy plants (many are hardy to Zone 3) and can survive for 25 years or more. The large-flowered hybrids may have blooms ranging from 4 to 10 inches in diameter and as many as 100 blooms per plant in a season. The species types have blooms ranging from 1/2 to 3 inches in diameter with diverse shapes and habit; many of the species have fragrant blooms, which is not true of most hybrids.

The leading clematis hybridizer in Britain in the 1860s (about the time that clamatis plants gained popularity) was the Jackman Nursery, which produced *C. x jackmanii* (introduced in 1862), still the most popular clematis grown today. In the 1880s, interest in clematis died down. Hybridizers were running out of ideas and the wilt "epidemic" put a damper on cultivation. Today, there is renewed interest in clematis, particularly in very hardy and disease-resistant small-flowered types.

Site Requirements

Clematis have a reputation for being difficult to grow, however, like any other plant if their needs can be met by the site and proper care, they will thrive. Clematis require full sun to grow best (6+ hours direct sun per day) though some dappled shade during the heat of the day is beneficial. Flowers of some red and blue large-flowered hybrids and the bicolors (such as 'Nelly Moser,' 'Hagley Hybrid' and 'Hybrida Sieboldiana') fade badly if they get too much sun and these should be planted in eastern exposures or partial shade.

The site should be open enough to allow for air movement around the plants. Soil should be rich and well-draining with a pH close to neutral (7.0). Though the plant's stems and foliage should be in sun, the roots like a cool, moist environment. With the exception of *C. montana*, clematis do not compete well with large tree roots. Most clematis will

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require staking so the twining leaf petioles can cling and climb upward, though some gardeners choose to let the plants sprawl over the ground, over woodpiles, other plants, etc.

Soil Preparation

Begin with a soil test to determine if the soil pH or the phosphorus level needs correction. If so, make corrections before planting. Soil in the planting area should be prepared to a depth of 24 inches in an area approximately three feet wide. It is best to incorporate one-third by volume some compost or rotted manure to help improve aeration and drainage.

Support

Consider the ultimate size and vigor of the clematis being grown and match this to the support needed. Supports must be thin and wire-like since this plant climbs by twining petioles that cannot grasp thick branches or heavy trellising. If growing clematis on a wall or fence, string galvanized or plastic coated wire to form six- to twelve-inch squares. Fasten this to the wall with eye bolts 3 – 4 inches from the wall to allow for ventilation and space for the vine to twine. Latticework or trellises can also be used if placed a few inches from the wall for ventilation and if large enough to support the vine. Poles can also be used for supporting smaller, less vigorous vines. Arbors and pergolas are suitable for the larger, more vigorous types of clematis.

Acquiring Plants

Plants are readily available in garden centers and through catalogs for spring planting, though they may also be available for fall planting. Catalogs may offer a greater selection of species and cultivars than are available locally. Clematis are most often container-grown as they do not withstand much root disturbance. The species and small-flowered hybrids have fibrous roots that are susceptible to root damage; disturb roots as little as possible. Plants may also be available bare root. These should be obtained in early spring and planted while still dormant.

Select plants that have multiple stems, healthy, dark green growth, and a root system that fills the container. If beginning with small plants, consider growing them in gallon pots during the summer in order for them to gain some size. Fertilize these plants through the season and plant them in the ground in the fall. Early September is a good time to plant to allow for good root establishment before freezing weather.

Planting and Establishing

After amending the native soil for planting, dig a hole to accommodate the root system. Cut stems back to 12 inches in height. This will help the plant branch as it begins to grow and will reduce the chance of stem breakage during the planting process. Clematis are planted with the crown 1 – 2 inches below the soil surface. Once the plant is in the hole at the proper depth, fill in with the backfill soil, firm, and water well to settle soil around the root system. If planting bare root plants soak the roots in a bucket of water for an hour before planting to fully hydrate them.

After planting place a protective collar of hardware cloth or chicken wire around the base of the plant to protect against damage from mowers, string trimmers, and animals. Because clematis prefer a cool root environment plan to underplant with a groundcover or perennials that have shallow, non-invasive roots. Artemisia 'Silver Mound,' hardy geraniums, creeping phlox, coralbells, candytuft and most veronicas work well. A 2-inch layer of mulch, low shrubs, or paving also provides a cooler root environment.

Clematis may seem a bit slow to establish. In the first season, there may be little growth and few or no blooms. However, it is important to get the roots well established. Fertilize annually for rapid growth during establishment with a 3:1:2 or 4:1:2 ratio fertilizer. Apply one-half pound of a 15-5-5 fertilizer to the soil in the 50 square feet surrounding each plant. Fertilization may not be needed or desired once the plant is established and growing well. Plants will need about 1 inch of water per week during the growing season applied through irrigation or rainfall for good establishment. Once the plant is well established, some basic care is needed. In dry seasons, watering deeply once a week is recommended. Renew mulch to a 2-inch depth in late spring after the soil has warmed unless a groundcover or other method is used to cool the root environment.

Transplanting

Clematis can be transplanted in the fall, late winter, or very early spring before growth begins. Dig as large a root ball as is possible (make sure soil is moist); the more roots preserved, the less the transplanting process will hinder the plant's growth. Make sure all the site requirements are met in the new location before moving any plant.

Pruning

The main purpose in pruning is to help plants produce the maximum number of flowers. Annual pruning is recommended. Sometimes older, neglected plants can be cut back into older wood and new buds may break. Growth from old wood will likely be weak and slow, however. If no pruning were done at all, plants would still grow and flower profusely, though not where you may want them to. Some flowering would occur high in the plant and out of sight.

Not all clematis can be pruned in the same way. There are three methods that can be applied to major groups depending on the time of year the plant flowers. No new growth must occur to enable the earliest flowering clematis to bloom, but the later flowering types must make new growth in order for flower buds to form. A few plants are not strictly bound to the following groups but may cross lines. Because vines will likely be entangled, make cuts carefully among the intertwining vines and spread and train them in various directions in order to cover the maximum possible area. This enables the plant to display its blooms rather than be bunched up.

Group A: Early-flowering Clematis: Plants in this group bloom in early spring, generally in April and May, from buds produced the previous season. Prune these back as soon as possible after bloom but no later than the end of July. This allows time for new growth to produce flower buds for the next season. Remove shoots that have bloomed. You can prune out more vines to reduce the size or to form a good framework of branches. Do not cut into woody trunks. Plants in this group include: *C. alpina*, *C. macropetala*, *C. armandii*, *C. montana*, and *C. chrysocoma*.

Group B: Large-flowered Hybrids: Large-flowered hybrids bloom in mid-June on short stems from the previous season's growth and often again in late summer on new growth (these blooms are smaller). Prune in February or March by removing dead and weak stems, then cut back remaining stems to the topmost pair of large, plump green buds. This cut could be a few inches to a foot or two from the stem tips. Plants in this group have the tendency to become bare at the base as they mature. Underplant to help conceal the stems. You may be able to force a flush of new growth from the base by cutting the vine back to 18 inches immediately after the flush of bloom in June. Plants in this group include: 'Nelly Moser,' 'Miss Bateman,' 'Lasurstern,' 'Duchess of Edinburgh,' 'Mrs. Cholmondeley,' and others.

Group C: Late-flowering Clematis: Plants in this group flower on the last two to three feet of the current season's growth. Some types begin blooming in mid-June and continue into the fall. This is the easiest group to prune since no old wood needs to be maintained. In February or March cut each stem to a height of about two to three feet. This will include removal of some good stems and buds. Eventually the length of the bare stem at the base will increase as the vine matures. Plants in this group include: *C. viticella*, *C. flammula*, *C. tangutica*, *C. x jackmanii*, *C. maximowicziana*, 'Perle d'Azur,' 'Royal Velours,' 'Duchess of Albany' and others.

Propagation

Homeowners may have success propagating clematis by cuttings or layering. All types can be increased by cuttings taken in May or June from half-hardened shoots of the current season's growth. Use a rooting mix of two parts sand and one part peat and a rooting hormone (available at garden centers). Supply high humidity, warmth and light in order for the cuttings to root within four to five weeks. The large-flowered hybrids will take more time to root; if cuttings are taken in May, they may not root until late August. If rooted by early August, plant them out. If no rooting occurs until late August, hold plants over winter in pots and plant in early spring. Layering is the easier method and can be done in the fall. Choose a mature stem produced earlier in the season, or from the previous season's growth. Secure it into the soil at the nodes or bury a pot containing a mixture of equal parts sand and peat and secure the stem into this. Rooting occurs within about 12 months at which point the rooted sections can be detached and planted.

Problems

The most devastating problem of clematis is a fungal stem rot and leaf spot commonly called "wilt." This is a disease on large-flowered hybrids. Small-flowered hybrids and the species and their cultivars are less susceptible to wilt. Symptoms include a sudden stem collapse typically as the flower buds are about to open and within a few days the stem and leaves turn black. Only one or perhaps several stems in a plant may wilt. The stem discolors and may exhibit lesions below the first pair of wilted leaves. Any part of the plant can be attacked down to and just below the soil level. The usual treatment is to remove the diseased stem below the wilted section, even below soil line. Plants usually recover from buds lower on the stem.

Powdery mildew is another fungal disease that can occur on flowers and young stems, usually in July and August. It should be treated with a fungicide when first noticed as the fungus can disfigure leaves and flower buds, causing them not to open. Mildew often occurs on plants in poorly ventilated locations. If this is the case, consider moving the plant. Aphids may feed early in the season on new growth. Slugs may attack newly planted plants or even feed on bark of young stems. Earwigs may feed on blooms and foliage or bore into unopened flower buds. Rabbits and mice may feed on or girdle stems. Birds may feed on overwintering buds.

Selected Species and Cultivars

Species and Small-flowered Types

- *C. alpina* - 6 to 8 feet in height, blooms April-May. Flowers on long stalks, 1.5 inches nodding, bell-shaped flowers, lavender or purple-blue in color. Seed heads are grey fluffy balls holding until winter. Hardy, fool-proof plant. Group A pruning.
- *C. alpina* 'Candy' - 6 to 8 feet in height, blooms April-May. Blooms have light pink outer sepals, pastel pink inner; stamens are green. Group A pruning.
- *C. armandii* - 15 to 30 feet in height, blooms April-May. Two-inch diameter blooms, creamy white in large axillary clusters; has a strong vanilla scent in warm weather. Strong, vigorous grower. Group A pruning; can cut to base to rejuvenate vine.
- *C. chrysocoma* - 20 feet in height, blooms May-June. Long stalked flowers 1.5 to 2 inches in diameter occur in axillary clusters; pale mauve-pink with creamy stamens. Some bloom occurs in late summer. New foliage is bronze-red. Group A pruning.
- *C. flammula* - 15 to 20 feet in height, blooms August-September. Flowers occur in terminal clusters in great masses; are 1 to 1.5 inches in diameter, white. Grown from seed so growth can be variable. Group C pruning.
- *C. macropetala* - To 15 feet in height, blooms April-May. Flowers are double, nodding bells, 2.5 to 3 inches in diameter, pale blue with purple shading. Seed heads last into winter. Foliage is neat and attractive; plants prefer cooler, shady location. 'Snowbird' is pure white with a hint of green on inside of bloom. Group A pruning.
- *C. maximowicziana* - To 30 feet in height, blooms in September. Flowers are 1.5 inches in diameter, cruciform, white. Very vigorous grower. Group C pruning.
- *C. montana* - 20 to 30 feet in height, blooms May-June. Flowers are white, 2 to 2.5 inches in diameter and some cultivars have a vanilla scent. One of the easiest to grow and propagate; very vigorous. Group A pruning.
- *C. tangutica* - 10 to 15 feet in height, blooms July-October. Most common yellow flowered form. Flowers are 1 to 1.5 inches in length and nod on a long stalk, singly or three to a stem. Seed heads are spectacular, lasting into winter. Group C pruning.
- *C. viticella* - 10 to 12 feet in height, blooms July-September. Flowers slightly nod, are 1.5 to 2.5 inches borne singly or in clusters on a slender stalk; rich deep purple with small green stamens. Vigorous and easy to grow. Group C pruning. 'Abundance' is bright mauve-pink red with deeper red veins and creamy green stamens. 'Etoile Violette' has slightly larger blooms that are deep purple with creamy-yellow stamens.

Large-flowered Hybrids

- 'Barbara Jackman' - 8 feet in height, flowers May-June. Vigorous, bushy plant. Flowers are 4 inches in diameter, deep purplish-blue with bright magenta bar and large, creamy-yellow stamens. Fades to mauve-blue. Group B pruning.
- 'Comtesse de Bouchard' - 6 to 8 feet in height, flowers July-August. Easy to grow, prolific bloomer; a good plant for smaller spaces. Flowers are 4 to 6 inches in diameter, pink with creamy stamens. Group C pruning.
- 'Hagley Hybrid' - 8 feet in height, flowers June-September. Flowers are 4 inches in diameter, pale mauve pink, fading to a washed out pink. Stamen filaments are white and anthers purple-red. Vigorous grower. Group B/C pruning.
- *C. x jackmanii* - 8 to 10 feet in height, blooms July-August. Flowers are 4 to 5 inches in diameter and deep bluish-purple. Free flowering. Group B pruning. 'Marie Boisselot' - 8 to 12 feet in height, flowers June-September. Opening flower buds are flushed with lilac-pink, flowers are 8 inches in diameter, white with creamy stamens. Strong grower. Group B pruning.
- 'Mrs. Cholmondeley' - 20 feet in height, flowers May-October. A "foolproof" plant. Blooms are light lavender blue, paler along the midrib, filaments white and anthers brown. Group B/C pruning.
- 'Nelly Moser' - 8 to 10 feet in height, flowers May-June and September. Flowers are 8 inches in diameter, pale rosy mauve with a central carmine colored midrib; dark maroon anthers. Flowers will fade badly in full sun; provide some shade for this plant. Group B pruning.
- 'Niobe' - 8 feet in height, flowers June-September. Cup shaped bloom opens dark ruby-red then turns to bright ruby red with cream stamen. First flowers are 6 inches in diameter, later ones 4 inches in diameter. Moderate grower with some bloom throughout the season. Group B/C pruning.
- 'Perle d'Azur' - 16 feet in height. Flowers continuously early summer to mid-autumn. Blooms are 4 to 6 inches in diameter, sky blue with green stamens. Group B pruning.
- 'Vyvyan Pennell' - 8 feet in height. Flowers June and September. Flowers are 6 to 8 inches in diameter, double at first, single later. Deep violet-blue blooms suffused with purple-red; golden stamens. Group B pruning.

Adapted from Jane C. Martin, Ohio State University Extension, 2001