

Gardenia

Gardenias have been popular shrubs in South Carolina since the 18th Century, and have been grown by the Chinese for over a thousand years. They were named after the Scottish naturalist Alexander Garden (1730 – 1791). Gardenias are not the easiest shrubs to grow, but the exquisite white, fragrant flowers make up for the extra attention gardenias require.



Double-flowered gardenia (*Gardenia jasminoides*) blossom.
Karen Russ, ©2008 HGIC, Clemson Extension

Mature Height/Spread

Gardenia (*Gardenia jasminoides*) is also known as cape jasmine, and is an evergreen shrub that typically grows to a height of 3 to 8 feet, depending upon the cultivar. Spread is usually about the same as the height. The foliage of well-fed shrubs is glossy, dark-green, 2 to 4 inches long and half as wide. Depending on the cultivar, the flowers can be either single or double and from 2 to 4 inches in diameter. They are waxy, white and very fragrant.

Growth Rate

The growth rate is medium.

Landscape Use

Gardenias are primarily grown for their fragrant flowers and handsome foliage. They should be planted where people will notice the fragrance. The flowers open over a long period of time, from May through June, and sporadically throughout the summer. Gardenias are considered deer resistant.



Single flowered gardenia blossom (*Gardenia jasminoides*).
Flickr: Creative Commons License 2.0

Cultivation

Gardenias require considerable maintenance. Fall is the best time for planting. They are best planted in light to partial shade; preferably with morning sun and afternoon shade. Gardenias resent root disturbance. Smaller cultivars will also grow well in containers and placed where their fragrance can be enjoyed.

Gardenias prefer acid (with a pH of less than 6.0), moist, well-drained soils. Add organic matter, such as compost or ground composted pine bark, to the planting bed and till into the soil before planting. Mulch plants with a 2 to 3-inch deep layer of pine straw, compost or ground bark.

Fertilize gardenias lightly in the spring once frost has passed with a well-balanced, extended-release, acid-forming, azalea fertilizer. Fertilize the shrubs again 6 weeks later to encourage extra flowers or faster growth of young shrubs. By well-balanced, this means to look for nutrients in the ratio of 2-1-1. Fertilizer examples are:

- Pennington Evergreen & Rhododendron Plant Food (12-6-6),
- Lilly Miller Ultra Green Azalea, Camellia & Rhododendron Food (10-5-4),
- Sta-Green Azalea, Camellia & Rhododendron Food (10-5-4),
- Pennington Azalea Food (10-6-8),
- Scotts Evergreen, Flowering Tree & Shrub Fertilizer (11-7-7),
- Vigoro Azalea, Camellia & Rhododendron Food (10-8-8).

Complete, acid-forming organic fertilizers are also excellent choices for use on gardenias, for spring and early summer fertilization. They are typically not as nutrient rich, and because of both the low nitrogen content and their inability to burn the roots, they can be mixed lightly into the soil in the fall at planting to enhance root growth. Organic fertilizer examples are:

- Espoma Holly-Tone (3-4-3),
- Fertrell Holly Care (4-6-4),
- Jobe's Organics Azalea Camellia & Rhododendron Fertilizer (4-4-4),
- Natural Guard Evergreen & Holly Food (5-4-5).

Do not fertilize gardenias in the fall. Doing so will stimulate tender growth, which may be killed if the temperature in winter drops below 15 degrees. Gardenias are cold-sensitive and during severe winters can be killed to the ground in the Upstate. Often they regenerate in spring.

Additional products containing iron may be applied during the growing season, if needed to correct the yellowed new foliage caused by an iron deficiency. This may occur if gardenias are limed or are planted near a new concrete foundation. An example of an iron-supplement is Ironite Mineral Supplement, which contains not only iron, but also numerous trace elements.



Gardenia "hips" are the fruit that occasionally appear in fall (*Gardenia jasminoides*).

Karen Russ, ©2008 HGIC, Clemson Extension

Prune shrubs after they have finished flowering in summer to remove straggly branches and faded flowers. Gardenias should be watered weekly during periods of drought in summer. Drip-irrigating the shrubs will keep water off the foliage and blossoms and prevents leaf spots.

Most of the older gardenia cultivars are cold hardy to USDA zone 8, but many of the newer and smaller cultivars are hardy to at least USDA zone 7a. Dwarf cultivars, however, are often more cold sensitive.

Problems

A whitefly infestation is the most commonly occurring problem on gardenias anywhere in the state. Whiteflies have piercing-sucking mouthparts, with which they penetrate the cells of a leaf, and then suck out the leaf sap. The top sides of infested leaves may become pale or spotted. These small, white-colored flies often remain unnoticed, as they primarily infest the lower surface of each leaf. As this pest removes plant sap, it excretes a large amount of clear, colorless, sugary waste, which drips onto the leaves below. This sugary waste, called honeydew, is quickly colonized by a black mold (sooty mold), which coats the leaves in summer.

Whiteflies may be controlled by sprays to the lower surfaces of leaves with an insecticidal soap solution or a horticultural oil mix. Both of these less toxic insecticides kill by suffocation. Sprays may need to be repeated every few days until the whitefly population is under control. Follow label directions

for mixing an insecticidal soap spray. Use horticultural oils as sprays between the temperatures of 45 and 90 degrees, and spray in the early morning or late evening to slow the drying time of spray. For horticultural oil, mix and spray a 2% solution (5 tablespoons of oil per gallon of water). See Table 1 for examples of brands and products.



Joey Williamson, ©2015 HGIC, Clemson Extension

Dark-colored sooty mold will grow on the sticky honeydew, which drips from whiteflies when feeding on gardenia foliage. Joey Williamson, ©2015 HGIC, Clemson Extension

Alternatively, numerous synthetic pyrethroid contact insecticides (such as bifenthrin, cyfluthrin and lambda cyhalothrin) will also control whiteflies if sprayed on the lower surfaces of leaves. Acephate, however, is a foliar systemic insecticide that will move through the leaf tissue. So sprays to the upper leaf surfaces will move downward to control the whiteflies. All foliar sprays may need to be repeated once or twice at 10 day intervals, as they typically do not kill the eggs. Do not spray plants in bloom to prevent injury to pollinating insects. See Table 1 for examples of brands and products.

Instead of numerous insecticidal sprays, a single soil drench of imidacloprid can be applied at the base of the shrubs in the spring as new growth appears to give season long control. Follow label directions for mixing and application. See Table 1 for examples of brands and products.

Similar in habit are small gray aphids, which cling to leaf undersides. These can be easily controlled

with insecticidal soap sprays. Nematodes are microscopic worms, which live in the soil and feed on plant roots. In sandy soil, these plant parasitic nematodes can cause gardenias to become stunted or even die. Root rots caused by several different fungi can also be a problem, primarily in poorly drained soils.

Although much less common, another problem encountered is "bud drop." Flower buds may abort and drop off just before they open. Causes of bud drop include low humidity, overwatering, under-watering, insufficient light and high temperatures (night temperatures between 50 and 55 °F are necessary for the formation of flower buds).

Cultivars

Larger, Upright, Double-flowered Cultivars:

- 'August Beauty' grows 4 to 6 feet high and 3 to 4 feet wide. Blooms heavily from mid-spring to fall with double 3-inch flowers.
- 'Mystery' is the best-known selection. It has 4-to 5-inch, double white flowers and typically grows 4 to 6 feet tall and 3 to 4 feet wide, but may get larger.
- First Love® ('Aimee'): May be listed as 'Aimee Yoshida'. Very large (4 to 5-inch in diameter), double blooms. Plants are larger than 'August Beauty'. Grows to 5 to 8 feet tall and 3 to 6 feet wide.
- 'Frost Proof': This cultivar produces 2- to 3-inch, double, fragrant blooms during early summer and sporadically during the remainder of the summer. It grows to 5 feet tall and 4 feet wide. It is more tolerant of early spring frosts.
- 'Mystery': This older cultivar grows to 5 feet tall and 3 feet wide, but may reach 6 to 8 feet tall. It produces very large, double flowers.
- Summer Snow® (PP22797): This cultivar grows to 4 to 5 feet tall and wide with double flowers, and is a very cold hardy cultivar.
- 'Veitchii': This is one of the oldest cultivars and grows to 4 to 6 feet tall and 3 to 4 feet wide. It has double flowers with a long bloom period.

Smaller Cultivars with Repeat Blooming:

- 'Chuck Hayes': This is an extra cold hardy cultivar that grows to 4 feet high with semi-double, 2 to 3-inch flowers during summer, and has a profuse re-bloom in fall.
- Crown Jewell® (PP19896): A cross between 'Kleim's Hardy' and 'Chuck Hayes' gardenias. It has a heavy bloom set with double, fragrant flowers, and very good cold hardiness. Blooms on old and new wood. Prune lightly after flowering to stimulate more flowers to form. This cultivar has a spreading habit, and grows to 2 feet tall and 4 feet wide.
- 'Daisy' is a more cold hardy variety recommended for the Upstate of South Carolina. It grows to about 3 feet tall and wide, and produces single-flowered blooms.
- 'Double Mint' (PPAF): From Plant Introductions. These compact, dense shrubs grow to 3 feet tall and wide, and produce double, 2-inch blooms. Flowers in early summer and repeat blooms throughout the summer.
- Heaven Scent® ('Madga I', PP19988): From the Gardener's Confidence® Collection. It is a hybrid of *G. taitensis* (Tahitian gardenia) and *G. jasminoides*. This repeat bloomer grows to 3 to 4 feet tall and wide with fragrant, semi-double, 5- to 6-inch flowers. Has a tight, compact form.
- Jubilation™ ('Lee One', PP21983): From the Southern Living Plant Collection. This cultivar grows to 3 to 4 feet tall and 3 feet wide. It blooms with double flowers in late spring and re-blooms during summer into fall.
- 'Kleim's Hardy' is hardy to 10 °F and grows to 3 feet tall and wide with single flowers in summer. It blooms in May and often has a smaller flush of blooms in fall.
- Pinwheel® ('PIIGA-1', PP22510): Blooms in late spring and repeat blooms until fall with fragrant, narrow-petaled, single flowers. Grows to 4 feet tall and wide.
- Scent Amazing™ ('LeeTwo', PPIP): From the Southern Living Plant Collection. This cultivar grows to 3½ feet tall and 4 feet wide. It has single white blossoms and blooms late spring/early summer, and then repeat blooms through fall.
- 'Variegata': This cultivar has nicely variegated foliage and double flowers on a compact, 3 to 4 foot tall and wide plant.

Dwarf Cultivars:

- 'Fragrant Pathways': This is an evergreen groundcover that grows from 8- to 10-inches high with a 3 foot spread. White double flowers and narrow foliage on this dwarf.
- 'Radicans' grows to only 6 to 12 inches tall and spreads 2 to 3 feet, with small, dark green leaves and inch-wide double flowers in summer. It is not very cold hardy.
- 'White Gem': This dwarf cultivar grows slowly to 2 feet tall and 1 to 2 feet wide. It produces single, 6-petaled flowers in late spring/early summer, and makes an excellent container plant.

Table 1. Pesticides to Control Insect Pests of Gardenias.

Active Ingredients	Examples of Brands & Products
Acephate	Bonide Systemic Insect Control Concentrate
Bifenthrin	Ferti-lome Broad Spectrum Insecticide Concentrate; & RTS Hi-Yield Bug Blaster Bifenthrin 2.4 Concentrate; & RTS Up-Star Gold Insecticide Concentrate Bifen I/T Concentrate Talstar P Concentrate
Cyfluthrin	Bayer Advanced Vegetable & Garden Insect Spray Concentrate; & RTS

Horticultural Oil	Ferti-lome Horticultural Oil Spray Concentrate; & RTS Southern Ag Parafine Horticultural Oil Bonide All Seasons Spray Oil Lilly Miller Superior Type Spray Oil Concentrate Monterey Horticultural Oil Concentrate
Imidacloprid	Bayer Advanced Garden 12 Month Tree & Shrub Insect Control Concentrate Landscape Formula Bayer Advanced 12 Month Tree & Shrub Insect Control Protect & Feed (2-1-1) Bonide Annual Tree & Shrub Insect Control with Systemaxx Ferti-lome Tree & Shrub Systemic Insect Drench Ferti-lome Tree & Shrub Systemic Insect Granules Green Light Tree & Shrub Systemic Insect Killer Concentrate; & Granules Gordon's ImidiPro Systemic Insecticide Gordon's Tree & Shrub Insect Killer Monterey Once A Year Insect Control II Bonide Borer Miner Killer RTS Bonide Systemic Insect Spray w/ Systemaxx RTS Ferti-lome Systemic Insect Spray Concentrate; & RTS Hi-Yield Systemic Insect Spray Concentrate; & RTS Spectracide Tree & Shrub Insect Spray Concentrate; & RTS Merit 2 Granular Martin's Dominion Tree & Shrub
Insecticidal Soap	Bonide Insecticidal Soap Concentrate Espoma Earth-tone Insecticidal Soap Concentrate Natural Guard Insecticidal Soap Concentrate Schultz Garden Safe Insecticidal Soap Insect Killer Concentrate Safer Brand Insect Killing Soap Concentrate
Lambda Cyhalothrin	Spectracide Triazicide Insect Killer for Lawns & Landscapes Concentrate; & RTS
RTS = Ready to Spray (a hose-end spray bottle)	

Revised by Joey Williamson, HGIC Horticulture Extension Agent, Clemson University, 10/15. Originally prepared by Marjan Kluepfel, HGIC Horticulture Specialist, and Bob Polomski, Extension Consumer Horticulturist, Clemson University. New 05/99. Images added 04/09.

This information is supplied with the understanding that no discrimination is intended and no endorsement of brand names or registered trademarks by the Clemson University Cooperative Extension Service is implied, nor is any discrimination intended by the exclusion of products or manufacturers not named. All recommendations are for South Carolina conditions and may not apply to other areas. Use pesticides only according to the directions on the label. All recommendations for pesticide use are for South Carolina only and were legal at the time of publication, but the status of registration and use patterns are subject to change by action of state and federal regulatory agencies. Follow all directions, precautions and restrictions that are listed.