

Gardenia (An Aromatic Plant) A Scientific Research

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1.0 Introduction:

There are about 250000 different types of plants, varying from giant trees to tiny mosses. They grow almost every where on land and in the sea, on plains or mountains, even in deserts and snowy wastes. About 40% of land is covered by trees and grass. The Plant Chosen for this research is GARDENIA.

2.0 About the plant:

Gardenias are waxy, white and very fragrant, seen either single or double and up to 4 inches in diameter. The Scientific Name is *Gardenia jasminoides* J. Ellis. The other names for gardenia are *Gardenia grandiflora*, *Gardenia radicans*, *Gardenia augusta*, *Gardenia schlechteri*, *Gardenia florida*. The gardenia has very fragrant creamy-white flowers and glossy, dark-green leaves.

Gardenia is one in about 250 species of flowering plants in the family Rubiaceae, native to the tropical and subtropical regions of Africa, southern Asia, Australia and Oceania. In the Japan and China, the gardenia flower represents feminine **grace, subtlety**, and **artistry**. [1]



2.2 Feature of Gardenia:

- 🌞 **sunset:** 7-9, 11-16, 18-28, 31
- 🌞 **Sun Exposure:** Light shade in Phoenix
- 🌞 **Origin:** China
- 🌞 **Growth Habits:** Evergreen shrub to 6 feet; glossy dark green leaves, 3 to 6 inches long (7-15 cm)
- 🌞 **Watering Needs:** Regular water
- 🌞 **Propagation:** Softwood cuttings with heels in February. Roots at 80° F (27 ° C)
- 🌞 **Family:** Rubiaceae

2.3 Uses of Gardenia:

Gardenias can be used as screens, hedges, borders or ground covers. They also may be used as free-standing specimens or in mass plantings. These shrubs are excellent choices for fragrant flowers and handsome foliage. To enjoy the flowers' fragrance, plant in areas with good air circulation near patios or windows where the fragrance will be noticed. Many cultivars bloom in the spring, while others bloom throughout most of the growing season. Plant gardenias in full sun, partial shade, or shifting shade for best flower production. Prolonged shade may reduce flowering. [2]

2.4 How should be planted ?

Gardenias should be planted in well conditioned soil containing peat moss and compost. Cultivating around the plants may damage their shallow roots, so the plant should be mulched with 2 to 3 inches of wood chips, sawdust or ground bark to keep the soil moist, cool and weed free. Feed the plants every three weeks during the growing season with a rhododendron-azalea food, or acidifying fertilizer. Proper temperatures are necessary for a gardenia to bloom. This is the most *critical* aspect.[3]



Flower buds will fail to form if day temperatures are higher than 70degrees or night temperatures are over 65 degrees or less than 60 degrees. The ideal temperature ranges would be 65 to 70 degrees during the day and 60 to 62 degrees at night.

Gardenias can be pruned as far back as you like but you should keep a few important details in mind. First, cut plants back when they are dormant. This will allow the stems to "heal their wounds" when the plants aren't actively growing. This way you can still enjoy flowers the next year. When pruning, *don't* cut all the leaves off. Some leaves need to be left so the plant can still produce food for the root system. The following spring, use an acidic fertilizer with chelaeted iron and high nitrogen so the plant can produce healthy leaves and buds. If plants to become bushier, simply pinch out the tips while the plant is dormant. Pinching will usually promote a heavier bloom the following year. If we are growing Gardenia as a potted plant indoors, keep it out of direct, hot sun, and allow it to only get *bright* light.[2]

2.4.1 Soil, Planting and Feeding

The soil to plant Gardenias in is very well conditioned. Mix peat moss and compost material into the soil to hold moisture. The soil needs to be moist at all times, but be careful not to drown the roots. We have to cover the soil with a material like wood chips, to make sure the soil maintains its moisture throughout

the day. pH of the soil around 5 or 6 should be maintained. We have to feed the Gardenia every 3 weeks with a rhododendron-azalea food.

2.4.2 Sunlight and Temperature

Gardenias will grow the best in full sunlight while being shaded on the hotter days during the summer months. High temperatures will stop your Gardenia flowers from blooming. The ideal temperatures for Gardenias are 65 to 70 degrees F during the daytime and at night, around 61 degrees F. Anything higher or lower than these ranges will stop the buds from forming.

2.5 Growing Gardenias

- Gardenia plants need **high humidity**.
- A loose, well-drained organic soil is recommended.
- For best results plant gardenias in full sun, partial shade, or shifting shade.



- Dig a hole twice the size of the root ball.
- Thoroughly mix one part soil and one part planting mix.
- Check that the top of the original root ball is slightly above the level of the surrounding soil.

- Take the soil mixture and make a gentle mound of soil sloping away from the plant.
- Water drains away from the trunk.
- Remove any air pockets, if present.
- Water the plant with a root stimulator.

2.6 Propagation:

Gardenia thunbergia can be propagated from seeds or cuttings. Tip or midsection cuttings with wood 6 to 8 weeks old should be cut 4 to 5 inches long with at least 2 or 3 sets of leaves. Cuttings can be taken at or between nodes as they root from the cut end. Leaf removal is unnecessary and undesirable because it results in a longer rooting period. Rooting of cuttings is best under continuous or intermittent mist, or in a closed-case propagating device. Rooting media should be a 50:50 combination of clean, sharp builders' sand and peat moss; or a 50:50 combination of peat moss and perlite. Gardenia can be cultivated, not from breeding but through mutation, and therefore, can be increased only by vegetative propagation. There is considerable variation in flower size and form, blooming time and duration, and plant growth among cultivars.



2.7 Pests and Diseases:

Probably the most serious gardenia disease is stem canker, which occurs on the main stem at the soil line. Stem canker is distinguished by rough, cracked areas that form cankerous growths near the soil line. The disease organism enters the plant through wounds, so every precaution should be taken to prevent damage to

stems. Destroy any infected plants to prevent infection of other gardenias. No fungicides are available to control the disease.

2.8 Insects:

Many insect pests attack gardenias and can be troublesome unless proper control methods are used. The most injurious insects include scales, aphids, spider mites, thrips and whiteflies. Scale insects include cottony cushion, soft brown scale and others. These insects attach themselves to host plants after hatching and give stems or leaves a lumpy appearance. Scale insects are difficult to control especially as they mature. Spider mites can cause considerable damage especially during hot, dry periods. These small pests feed primarily on the underside of the foliage, causing colorless or whitish spots. Therefore, considerable injury usually has occurred when the homeowner notices the damage.

Bud Drop: Flower buds abort and drop off just before they open. Common causes include low humidity, overwatering, underwatering, insufficient light and high temperatures (night temperatures between 50 and 55 ° F are necessary for the formation of flower buds).

2.9 Fertilization:

Proper fertilization is important for gardenia growth and flower production. Most established gardenias grow well with two or three applications per year. One application is normally scheduled around February or March and another in September or October. A third application may be made during the summer.

3.0 Conclusion

The topic chose has been researched by referring encyclopedia about plants, books and journals and websites and the results of the research found more useful. To conclude, Gardenia is one of the best aromatic plant well suited to be planted in Kingdom of Bahrain. While doing this scientific research, we have

gained lot of knowledge about various plants, particularly aromatic plants. After analyzing all of them we found Gardenia is the best choice to be planted in Kingdom of Bahrain.

References:

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