

Greek Potted Gardenias Have Many Genetic

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Received: 15 March, 2022, Manuscript no. jnppr-22-80082; **Editor assigned:** 17 March, 2022, Pre QC no. jnppr-22-80082 (PQ); **Reviewed:** 28 March, 2022, QC no. jnppr-22-80082 (Q); **Revised:** 7 April, 2022, Manuscript no. jnppr-22-80082 (R); **Published:** 12 April, 2022

ABSTRACT

One of the most significant pot plants in Greece's floral industry is the gardenia. The cooperative Gardenia Growers Group cultivates cv. Pelion, a morphologically homogeneous cultivar, primarily around Mount Pelion. It is reproduced through terminal shoot cuttings. Greek gardenia is the most common name for cv. Pelion in flower exports to Europe. There is currently a paucity of knowledge regarding the genetic makeup of the "Greek gardenia" and the plant propagation supplies utilized in Greek nurseries. With the help of 11 RAPD markers, we used a total of 21 clonal samples from the cooperative nurseries of GGG to analyse the genetic variation of gardenia. The samples and gardenia cv were compared. Kimberly. Ten RAPD primers have high polymorphism and produced bands across the board. A total of 81 DNA fragments were amplified, and 11 distinct bands were found among them. The clones have very little genetic variation, and they all belong to one big group that can be thought of as one single clone that has been widely cultivated and is disseminated to the flower market, according to a comparison of band patterns. Our findings show that this clone can be recognized from the control cv with great clarity. In 18 out of 21 people, Kimberly and its molecular pattern were found. The three surviving individuals can be thought of as variations of the dominant clone because each of them had a distinctive band pattern. As a result, Greek gardenia or Pelion can be regarded as a cultivar with an uniform genetic make-up and little diversity that most likely came about as a result of clonal varieties being utilized as propagation material in some nurseries.

Keywords: Gardenia Plant, Blossom, Gardenia

INTRODUCTION

Jasmine-scented gardenia Ellis, often referred to as common gardenia or cape jasmine, is a tiny, evergreen shrub in the Rubiaceae family. It has bright, leathery dark green leaves and fragrant, white blooms. It is mostly grown as a potted plant for usage in indoor spaces like homes and workplaces. The most often used gardenia varieties have double flowers and are available in tiny, compact sizes in the flower market. The nation's top cooperative partnership for growing gardenias from terminal shoot cuttings and distributing rooted cuttings to other flower farmers is the Gardenia Growers Group, located close to Mount Pelion. GGG exports about a million compact small-sized gardenias, each with 12-18 blooms and flower buds, to markets for flowers in the European Union and other nations. The gardenia plants grown and exported by GGG are phenotypically uniform and have been referred to as a cultivar in the European flower trade as Greek gardenia. Phenotypic similarity does not, however, ensure genetic consistency to the extent necessary to classify Greek gardenia as a single cultivar. The study of species variety has recently gained more attention since, in addition to being used as a decorative plant; gardenia is also a valued plant due to its medicinal capabilities, especially in traditional Chinese medicine. To differentiate gardenia species for systematic purposes or to investigate the phylogeography of wild populations in China, studies have been done. Our knowledge of the grown clones is restricted to the classification of particular cultivars using morphological indices, such as Kimberly, Veitci, Kleim Hardy, etc. The plants are generally offered as gardenia plants rather than by cultivar. Rapd markers are frequently utilized in ornamental plants to molecularly characterize genetic diversity or to establish pedigree. The biodiversity and phylogeny of rose have been widely studied using rapd markers, in particular. In other experiments, commercial traits including petal

count and flower color were mapped through controlled crossovers. Recent studies also assessed the length of rose blooming and the oil content of the petals. Rapd has also been utilized to identify the color, flower arrangement, and flower doubleness in carnations. There are reports about the systematics and the distance between hybrids in chrysanthemum and gladiolus. While many agronomic traits, including flower morphology, stem length, inflorescence color, and form, has been tagged in gerbera. Molecular markers have been used to examine the genetic separation between cultivars in poinsettia and cyclamen. They have been employed in azalea to categorise species or build linkage maps for crucial commercial traits like bloom colour and iron-deficiency resistance.

Despite being valuable as an ornamental and medicinal plant, the genetic diversity of commercial gardenia varieties has not been characterized at the molecular level. The genetic make-up of the propagation material used in the cooperative nurseries

run by the GGG partnership, which creates the vast majority of gardenia plants and cuttings in Greece, is also unknown. Although the plant material utilized typically does not outwardly differ, molecular information regarding the genetic variance of the commercially available clones is still lacking. As a result, the goal of the current study was to examine the genetic diversity of the cultivated clones of CV. Applying RAPD molecular markers to Pelion or Greek gardenia allows growers to distinguish and spread genotypes with advantageous commercial floricultural traits, characterize propagation material, and identify putative cultivars.

Snippets of Sections

Plant material: Five nurseries owned by the GGG and the nursery at Aristotle University of Thessaloniki provided samples of gardenia plants. As a control, the gardenia variety Kimberly was employed. In order to identify distinct phenotypes with variations in the shape and size of the leaves, we randomly selected similar plants as a representation of the Greek gardenia because the vast majority of the GGG gardenia propagation material did not differ upon visual inspection.

DISCUSSION

Greek gardenia farmers create their plants for the flower market from terminal shoot cuttings taken during pruning to elaborate compact shape and size, either from stock plants or from established container plants. Gardenia producers in the area frequently trade plant propagation materials with one another based on demand. When compared to cv, Kimberly, almost all of the clonal samples in our results displayed the same band pattern and variation.

CONCLUSION

Our findings show that the gardenia clonal cv. samples. Examined Pelion exhibit extremely little genetic variation, most likely as a result of their asexual reproduction. For the production and delivery of cv plants, this is a significant advantage for the GGG and the other gardenia growers in Greece. Pelion with stable and consistent morphological traits is preferred by European flower markets.

ACKNOWLEDGEMENTS

The cooperative partnership Gardenia Growers Group of Greece is gratefully acknowledged by the authors for providing the plant material. The State Scholarships Foundation of Greece is also recognized by G.F.T. for providing a doctoral scholarship.