

Study of Introduced Ornamental Plants in the Apsheron Conditions

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ABSTRACT

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With the aim of studying the taxonomic composition, origin, biological characteristics of introduced ornamental plants in the parks and gardens of Absheron, designing various forms of compositions, grouping plants in compositions according to biological and decorative characteristics in 2019-2025 research work was carried out in the "Landscape architecture" laboratory. In the course of scientific research, scientific expeditions were organized to the Absheron National Seaside Park, Philharmonic Garden, Samed Vurgun Garden, Khagani Park, Flower Park, Sahil Garden, Sabir Garden, Nizami Garden, Heydar Park of Khatai District and Chambarakend Park. As a result of the research work, it was found that the introduced ornamental trees, shrubs and herbaceous plants studied in parks and gardens adapt well to the soil and climatic conditions of Absheron, are promising and recommended for use in landscape design, when creating various forms of compositions.

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INTRODUCTION

Green spaces play a significant role in urban planning. In addition to improving the environment, they contribute to the distinctive appearance of cities and individual neighborhoods, which are developed using industrial methods and standardized designs for residential and public buildings. In the context of a modern city with its developing industrialization, increasing ground transportation loads, and high rates of housing construction, issues of landscaping, creating favorable conditions for work and rest, and protecting the air from pollution are of particular importance. Many cities in the republic have seen the addition of new gardens, squares, parks, and boulevards, and improved landscaping of streets, squares, and neighborhoods. Deciduous and coniferous trees, flowering shrubs, and perennials are being planted in greater numbers. Building the city of Baku around landscape architecture is a significant environmental challenge for the modern era. Trees, shrubs, and herbaceous plants play a vital role in parks and gardens, forming the basis of Absheron's flora. In the landscape design of Absheron, along with local plant species, various species of trees, shrubs and herbaceous plants introduced to the conditions of Absheron from different regions of Azerbaijan and also from foreign countries are widely used.

When landscaping Absheron, considering the natural features of the area, choosing the right ornamental plants is crucial. In a garden, dense tree canopies create a lot of shade, and plants left in the shade die. Therefore, when thinning the trees, it's recommended to plant garden flowers. Nowadays, using ornamental herbaceous plants to create a flower carpet or composition is the highest form of garden art [1, p.189-190].

Today, much attention is paid to the improvement of public spaces, country houses, and garden plots, so when designing a modern park, a residential complex, or a country plot, landscape design takes center stage [2, p.5].

The role of green spaces is multifaceted. They play a vital sanitary and hygienic role, influencing thermal, water, and wind conditions, determining the microclimate of the city as a whole or in individual districts. The degree to which green spaces influence temperature depends on their nature, size, and species composition, but the effect is always positive. In summer, air temperatures among green spaces are lower, and in winter, higher, than in open areas. Flowers and flowering shrubs constitute a special group of plants in ornamental gardening. Expanding the range of varieties is one of the most important tasks of modern ornamental gardening [3, p.7].

Shalala G. et al, Study of Introduced Ornamental Plants in the Apsheron Conditions

Greening of populated areas - urban planning principles - a set of urban planning, architectural and landscape, engineering, and agrotechnical measures for the improvement and greening of populated areas, urban public centers, residential and industrial development areas, highway network, suburban areas, industrial enterprises, along streets and highways [4, p.3].

The vegetation that is part of a modern city performs a number of important functions, the first of which is to provide favorable climatic and sanitary conditions for the life of the population. Green spaces participate in the formation of the aesthetic appearance of a settlement and contribute to its clear functional organization [5, p.4].

With the aim of studying the taxonomic composition, origin, biological characteristics of introduced ornamental plants in the parks and gardens of Absheron, designing various forms of compositions, grouping plants in compositions according to biological and decorative characteristics in 2019-2025 research work was carried out in the "Landscape architecture" laboratory.

MATERIAL AND METHODS

The study's materials include various species of ornamental trees, shrubs, and herbaceous plants. The following methods were used to study introduced ornamental plants in Absheron's landscape design: analysis, observation, photography, descriptive methods, and scientific literature.

When studying plants, families, genera, species, homelands of ornamental trees, shrubs and herbaceous plants in parks and gardens, biological characteristics of plants (morphological indicators and phenological phases of development) were determined, composition styles (regular – geometric shapes and landscape or scenic – original shapes), grouping of ornamental plants in compositions according to biological and decorative features, decorative pruning of trees and shrubs, promising plant species selected and recommended for use in landscape design of Absheron.

RESULTS AND DISCUSSION

In the context of scientific research, scientific expeditions were organized to the Absheron National Seaside Park, the Philharmonic Garden, the Samed Vurgun Garden, the Khagani Park, the Flower Park, the Sahil Garden, the Sabir Garden, the Nizami Garden, the Heydar Park of the Khatai District, and the Chambarakend Park. In parks and gardens, the taxonomic composition, origin, and biological characteristics of ornamental trees, shrubs, and herbaceous plants introduced into the conditions of Absheron were studied, as well as the grouping of plants in compositions based on biological and ornamental characteristics, the design of compositions in both formal and landscape styles, the rules for using small architectural forms around compositions, and decorative pruning of plants. Many introduced species are grown in cultural settings and, by pushing native plants into the background, attract more attention.

Plants introduced from Turkey, Iran, Holland, and Mediterranean countries adapt well to the soil and climate conditions of Absheron, as the climate of these countries is very similar to the climate of Absheron. Among the introduced trees and shrubs, various species of pyracantha, photinia, erythrina, spruce, magnolia, baobab, catalpa, etc. are widely grown in the parks and gardens of Absheron.

In the "Landscape architecture" laboratory, research work was carried out; bulbs of various varieties of tulips, hyacinths, lilies, crocuses, gladiolus, and narcissus were introduced from Holland to the conditions of Absheron and grown on the Institute's experimental plot, their taxonomic composition, origin, biological characteristics, propagation, agricultural practices, and the grouping of these plants in compositions based on biological and ornamental characteristics were studied. These bulbous plant varieties bloom in the spring earlier than other herbaceous plants and are widely used in compositions.

The cultivation of some ornamental trees, shrubs and herbaceous plants in various plantings is shown in table 1.

Table 1. Growing some ornamental trees, shrubs, and herbaceous plants in various plantings

№	Species	Life form	Border	Single landing	Group planting	Flowerbed
1	<i>Adansonia digitata</i> L.	Tree		+	+	
2	<i>Camelia japonica</i> L.	Bush	+	+	+	+
3	<i>Osmanthus burkwoodii</i> Lour.	Bush	+	+	+	
4	<i>Magnolia liliflora</i> Desr.	Tree		+	+	
5	<i>Picea pūngens</i> L.	Tree		+	+	
6	<i>Laurocerasus officinalis</i> R.	Bush	+	+	+	
7	<i>Pyracantha angustifolia</i> F.	Bush	+	+	+	
8	<i>Photinia serratifolia</i> K.	Bush	+	+	+	+
9	<i>Euonymus europaea</i> L.	Bush	+	+	+	
10	<i>Callistemon speciosus</i> Sweet	Tree		+	+	

11	<i>İlex colchica</i> Pojark.	Bush	+	+	+	
12	<i>Sequoiadendron giganteum</i> Lindl.	Tree		+	+	
13	<i>Catalpa bignonioides</i> Walt	Tree		+	+	
14	<i>Arbutus unedo</i> L.	Tree		+	+	
15	<i>Erythrina crista-galli</i> L.	Tree		+	+	
16	<i>Cercis chinensis</i> Bge	Tree		+	+	
17	<i>Phormium tenax</i> J.R.Forst.	Grass	+		+	+
18	<i>Lilium candidum</i> L.	Grass	+		+	+
19	<i>Gladiolus communis</i> L.	Grass	+		+	+
20	<i>Hyacinthus orientalis</i> L.	Grass	+		+	+
21	<i>Tulipa gesneriana</i> L.	Grass	+		+	+
22	<i>Narcissus triandrus</i> L.	Grass	+		+	+

Seeds and cuttings of *Erythrina crista-galli* L. were introduced from the laboratory in Turkey to the conditions of Absheron and were grown for the first time on the experimental plot of the Institute, the biological characteristics, reproduction, agricultural technology of the plants, and their use in creating compositions were studied. Some trees and shrubs introduced from foreign countries to the conditions of Absheron are shown in fig. 1-3.



Fig.1. *Pyracantha angustifolia* F.



Fig.2. *Picea pūngens* L.



Fig.3. *Erythrina crista-galli* L.

Some bulbous herbaceous plants introduced from Holland to the conditions of Apsheron are shown in fig. 4-6.



Fig.4. *Hyacinthus orientalis* L.



Fig.5. *Lilium candidum* L.



Fig.6. *Tulipa gesneriana* L.

CONCLUSION

To further develop landscape design in Absheron, parks and gardens should be enriched with new introduced ornamental trees, shrubs, and herbaceous plants from various regions of Azerbaijan and foreign countries, and used in creating compositions.

As a result of the research work, it was found that the introduced ornamental trees, shrubs and herbaceous plants studied in parks and gardens adapt well to the soil and climatic conditions of Absheron, are promising and recommended for use in landscape design, when creating various forms of compositions.

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