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STUDY AND RATIONAL USE OF BIODIVERSITY OF PERSPECTIVE DECORATIVE PLANTS IN CONDITIONS OF AZERBAIJAN**Corresponding Member of ANAS T.S.Mammadov, Sh.A.Gulmammadova**

There are described results of scientific research works on determining works of most introduced, perspective, trees, shrubs and herbaceous plants from local flora and plants from foreign countries in using of creating different compositions in Azerbaijan. Also there are studied their biological and ecological features. It is determined that these plants are well adapted in Azerbaijan climate conditions, very perspective and they are recommended for use in parks, gardens, in various composition creations.

Keywords: *biodiversity, perspective, decorative, plant, composition*

Introduction

In modern era has been increased an interest to creating of parks, gardens, zones of rests in style of landscape architecture. The ornamental trees, shrubs plantings, flower-gardens, lawns are reason to originality and beauty of cities, settlements, they are also promoting to recreation of environment. There has been proceeded in Azerbaijan Republic independency time connect with state economic development extensive genofond protection in country landscape, increasing biodiversity and ecological balance stability. In Baku central avenues and in other big cities have been established new parks, landscape compositions using in it ornamental trees, shrubs and herbaceous plants. In Apsheron parks, alleys, squares, green lawns cultivated plants have significantly improved the life of citizens.

Azerbaijan is a country with rich architectural and landscape heritage, origins went back to the past distance. It has been a long while at the crossroads of important caravan routes leading from Asia to Europe. Azerbaijan gardens and parks are the greatest social wealth of our citizens. In parks and gardens modified nature has acted as a natural environment and as a basis of highly valued human social functions implementations [1].

In Azerbaijan it has taken a special importance to study all of different branches of park - garden arts. Nevertheless it has become preser-

vation tasks of our cultural heritage. Many of historical gardens and parks, which have been formed as an organic part of this heritage have been disappeared or have been rapidly destroyed in our eyes, design of flowers of previous time are not suitable for new planning forms, to build and improve our cities and housings. There has been arisen an urgent need for reconstruction and renovation of park and gardens landscape compositions, to take a caring attitude to landscape architecture monuments, immediate suspension of their destruction processes, the creation of new compositions in flower and ornamental plants landscape architecture. We have purposed to conduct research works on study of biological and ecological features of some ornamental trees, shrubs and herbaceous plants introduced from different countries and from local flora in Absheron climate conditions and their use in landscape architecture in Institute of Dendrology NAS of Azerbaijan in laboratory "Landscape architecture".

Materials and methods

The research objects are different species and genus of ornamental trees, shrubs and herbaceous plants.

Morphological features of vegetative organs have been studied by method I.T.Vasilchenko [8] and I.Q.Serebryakov [6], and morphology of roots system by method V.A.Kolesnikov [2].

Institute of Dendrology territory is consisted of 12 hectares; it has a beautiful example in Absheron landscape architecture. There are collected many plants in Institute of Dendrology from round the world. Greenhouse stocks in Institute of Dendrology are a living museum of tropical and subtropical plants. There are scientifically studied biological features and their use in landscape architecture of subtropical and tropical plants in greenhouses. By research works have been carried out in Arboretum territory of Institute of Dendrology NAS of Azerbaijan, in parks, streets, squares of different areas of Baku city, in seaside parks, in front of the Republic Palace has been created landscape compositions including of evergreen trees and shrubs, ornamental herbaceous plants. Some of designed landscape compositions have been shown in article's figures.



Fig. 1. Original shape



Fig. 2. Square shape

Early-flowering bulbous are planted usually near mix borders between perennials. They are perfectly combined with ground-covering plants that grow and gradually have covered the area fades primroses [3].

We have used 2 styles of composition structures: regular in form of geometric shapes or landscape. In compositions of the regular style are created different geometrical shapes, such as "Square", "Rhomb", "Circle", "Star", "Rectangle», but in landscape style - the original form of the compositions, such as "Flowers", "Buta", "Map of Azerbaijan", "Tulip", etc. Time of flowering, color and flower shapes, their quality, their size, height of different sorts and species is while you create compositions during the time of flowering, it depends on color and shape of flowers, their quality, their size, their height of the various species and varieties of plants. By making compositions are taken into account the biological and ecological characteristics and decorative qualities of plants.

Most of flower plants are photophilous and they couldn't tolerate shady places, or many of them are poorly developed in semi shade places. However, the flower gardens should be well protected against the wind [5].

Each year in the compositions are changed annual plants with another annual plants, but perennial plants are stayed fast. In centre of compositions has been planted taller, mostly evergreen shrubs and trees, and at the edge are planted lower, perennial plants and annual herbaceous plants. We have aim to have plants in well grown in plants composition and evolved; we have picking them with the request of soil, light, heat and moisture. There are chosen plants in compositions by the way that their blooms are changed at the same time from fade plants changing to other flowered plants, thus is ensuring the continuity of flowering.

Most beautiful compositions have obtained by the coincidence of flowering perennials with beautiful flowering blooms of shrubs and trees [7].

Every year in different parts of Baku and in front of Republic Palace has held day of flowers. There has been brought for flower day over than

700 species of flowers from various countries of the world. There are demonstrated eastern sculptures of fabulous heroes created from different flowers.

With composition's creation we must take into account the biological features and ecological resistance to local soil-climate conditions to planted trees, shrubs and flowers. Ornamental qualities are the main features of plants [4].

Nowadays by creating flower compositions has paid much attention to bulbous and tu-

berous plants. These plants are hyacinth, tulip, narcissus, gladiolus, crocus, lily and etc. Bulbous and tuberous plants are differed of high decorative quality, beautiful, fast flowering and are used in design of flower-gardens. In the research work has studied biological and ecological features of bulbous and tuberous plants and there has used in the creation of compositions.

The most perspective ornamental plants for creating compositions in Absheron are showed in table 1.

Table

The most perspective ornamental plants for creating compositions in Absheron

№	Name of species	Parks, gardens, squares					Kindergardens	Intradistricts	Streets	Highways
		alleys	single	In groups	borders	Living hedges				
1	<i>Acer campestre</i> L.	+	+	+	-	-	+	+	-	-
2	<i>Albizia julibrissin</i> Dur.	+	+	+	-	-	+	+	+	-
3	<i>Cercis siliquastrum</i> L.	+	+	+	+	+	+	+	+	+
4	<i>Fraxinus excelsior</i> L.	+	+	+	-	-	-	+	-	-
5	<i>Ligustrum lucidum</i> Ait.	+	+	+	+	+	+	+	+	-
6	<i>Olea europaea</i> L.	+	+	+	-	-	+	+	+	-
7	<i>Trachycarpus excelsa</i> Thunb.	+	+	+	-	-	+	+	+	-
8	<i>Quercus ilex</i> L.	+	+	+	+	+	+	+	-	-
9	<i>Cupressus sempervirens v. horisontalis</i> Mill.	+	+	+	+	+	+	+	+	+
10	<i>Punica granatum</i> L.	+	+	+	+	+	-	-	-	+
11	<i>Pinus eldarica</i> Medw.	+	+	+	-	-	+	+	+	+
12	<i>Juniperus pachyphloea</i> Torr.	-	+	+	+	-	-	+	+	+
13	<i>Ligustrum vulgare</i> L.	-	+	+	+	+	+	+	+	-
14	<i>Lonicera fragrantissima</i> Lindl.	-	+	+	-	-	-	+	+	-
15	<i>Rosa sp. diversa</i>	+	+	+	-	-	+	+	+	-

Footnote: (+) – used; (-) – not used



Fig. 3. The circle shape in front of the Republic Palace

For reason of study of Absheron dendroflora, therefore there are carried out following research-scientific works on perspective use of greening works on trees-shrubs, herbaceous introduct in parks and in gardens.

In garden-park zones of Baku city are defined taxa composition of trees-shrubs and herbaceous plant introducts.

1. There are carried out systematic, biological and ecological analysis.

2. There are defined categories of using in industry of introducts.

3. There are selected the perspective species for city greening.

4. Plants are grouped by height, deciduous, evergreen and by other features.

Conclusion

By research works held in Institute of Dendrology and its scientific bases of floral compositions are determined in conditions of Absheron climate their decorative quality uses, flowering time and their resistance to environmental factors. It was found, that introduced from different countries and from local flora ornamental trees, shrubs and herbaceous plants has been well adapted in Absheron climate. They are also prospectively and there are recommended for use in a various composition's creation of parks and gardens design in Absheron. As results of research-

scientific works are defined the most perspective ornamental plants used in contemporary creating the compositions in Absheron greening: about 25 genres of trees and shrubs plants, about 25 genres of herbaceous plants. There is determined growth of 87 families, 230 genres, 660 species of woody-shrub plants recently in Absheron and in close areas in natural and cultural condition.

The growth phases of plants used currently in greening are going normal. They are divided plants by resistance to local climate-soil conditions used in greening into 3 perspective groups:

I group – such perspective species, not observed damages in winter;

II group – relatively few perspective species: in winter are damaged the ends of the annual shoots;

III group – few species and not perspective species: in winter are died off the terrestrial parts of plants covered with snow, but in spring they are restored again.

Every day the Azerbaijan landscape architecture is developed in different city regions. In squares, streets, parks, gardens are created beautiful compositions. We hope that the landscape architecture will be promoted for further development and it will continue to contribute the beauty to Azerbaijan land.

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**AZƏRBAYCAN ŞƏRAİTİNDƏ PERSPEKTİVLİ DEKORATİV BİTKİLƏRİN
BİOMÜXTƏLİFLİYİNİN ÖYRƏNİLMƏSİ VƏ SƏMƏRƏLİ İSTİFADƏSİ****T.S.Məmmədov, Ş.A.Gülməmmədova**

Məqalədə Azərbaycanda müxtəlif kompozisiyaların yaradılması üçün istifadə edilən perspektivli, yerli floradan və müxtəlif ölkələrdən introduksiya olunan dekorativ ağac, kol və ot bitkilərinin müəyyən edilməsi, onların bioekoloji xüsusiyyətlərinin öyrənilməsi üzrə elmi-tədqiqat işinin nəticələri göstərilmişdir. Müəyyən edilmişdir ki, bu bitkilər Azərbaycan şəraitinə yaxşı uyğunlaşır, perspektivlidir və parkların, bağların, xiyabanların tərtibatında, müxtəlif kompozisiyaların yaradılmasında onların istifadəsi məqsədəuyğundur.

Açar sözlər: biomüxtəliflik, perspektivli, dekorativ, bitki, kompozisiya

**ИЗУЧЕНИЕ И РАЦИОНАЛЬНОЕ ИСПОЛЬЗОВАНИЕ БИОРАЗНООБРАЗИЯ
ПЕРСПЕКТИВНЫХ ДЕКОРАТИВНЫХ РАСТЕНИЙ В УСЛОВИЯХ АЗЕРБАЙДЖАНА****Т.С.Мамедов, Ш.А.Гюльмамедова**

В статье описаны результаты научно-исследовательской работы по определению наиболее перспективных, интродуцированных из местной флоры и зарубежных стран декоративных деревьев, кустарников и травянистых растений, используемых для создания различных композиций в Азербайджане, изучению их биоэкологических особенностей. Выявлено, что эти растения хорошо адаптируются в условиях Азербайджана, являются перспективными и рекомендуются при оформлении парков, садов, скверов, создании различных композиций.

Ключевые слова: биоразнообразие, перспективный, декоративный, растение, композиция