



RESEARCH ARTICLE

TREES AND SHRUBS INTRODUCENTS USED IN GREENING OF BAKU CITY

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ABSTRACT

In this article are given and provided detailed information about using of trees and shrubs for planting in Baku city. The research results are conducted over the 2010-2016 years and used implementation in landscaping architecture. It is completed using in landscape architecture of 87 families, 230 genus, 660 species of trees and shrubs in floristic compositions, living forms, ecological types, grouped by the prospects of economic significance are identified the suggestions for the implementation in greening.

INTRODUCTION

Nowadays the total area of the greening in Absheron peninsula are exceeded of thousand hectares. There are used in greening completely accustomed to soil-climate conditions of Absheron, introduced by tested of biologically, ecologically, decorative features of thoroughly studied trees and shrubs. There are researched the floristic composition of parks and gardens, the greening areas, taxonomic composition of introducements, ecological analysis, their profitable economic features.

MATERIALS AND METHODS

In research works are used personal works in addition many literature sources ("Azerbaijan trees and shrubs", "Azerbaijan flora", "Dendrology", "New species of trees and shrubs used in greening of Absheron"), also there are used materials dedicated to study the city flora (U.M. Agamirov, K.M. Guliyev, I.S. Safarov, N.A. Babayev, T.S.Mammadov and et.c.). In plants determination are used "Atlas modifier of trees and shrub's plants".

Analizis and discussions:

1. The systematic composition of trees and shrubs introducements:

Baku city trees and shrubs introducements are included 196 genus, 84 family, 526 species. From researches are determined

that below noticed families are dominated in greening: *Rosaceae* (88 species), *Fabaceae* (50 species), *Oleaceae* (26 species), *Cupressaceae* (25 species), *Myrtaceae* (16 species), *Aceraceae* (15 species), *Caprifoliaceae* (15 species), *Pinaceae* (14 species), *Compositae* (14 species), *Anacardiaceae* (12 species), *Moraceae* (11 species), *Fagaceae* (10 species), *Caesalpiniaceae* (9 species), *Celtidaceae* (9 species), *Berberidaceae* (8 species). In composition of introducements the high taxonomic modifiers are as below: Gymnospermae - 48 species, Angiospermae - 478 species. Total amount of Gymnospermae species are 9,1%, Angiospermae species are 90,9% (1).

2.The vital forms of Trees and shrubs introducements:

There are determined by research work that 239 species of introducements (45, 8%) are trees, 279 species (39, 0 %) are shrubs, and 8 species (15, 2%) are ivies.

3.The perianth color of Trees and shrubs introducements

Among introducements 116 species (22,4%) are white, 78 species (15,1%) are red, 65 species (12,3%) are yellow, 34 species (6,6%) are blue, 221 species (43,0%) are green color and they are plants having perianth. There are noticed that the amount of suffered reduction among existed of perianth species introducements are low (4 species)- 3,0%. Another color of perianth (purple) is occurred in 1-2 species (2).

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Table 1. The systematic composition of trees and shrubs introducents

№	Families	Amount of genus	Total amount, in %	Amount of species	Total amount, in %
1	Cycadaceae	1	0,5	1	0,2
2	Ginkgoaceae	1	0,5	1	0,2
3	Araucariaceae	1	0,5	1	0,2
4	Taxaceae	2	1,0	2	0,4
5	Taxodiaceae	2	1,0	2	0,4
6	Pinaceae	4	2,0	14	2,7
7	Cupressaceae	6	3,1	25	4,8
8	Ephedraceae	1	0,5	4	0,8
9	Aceraceae	1	0,5	15	2,9
10	Acanthaceae	1	0,5	1	0,2
11	Asparagaceae	1	0,5	4	0,8
12	Asclepiadaceae	1	0,5	1	0,2
13	Agavaceae	1	0,5	3	0,6
14	Alliaceae	1	0,5	1	0,2
15	Aquifoliaceae	1	0,5	1	0,2
16	Anacardiaceae	4	2,0	12	2,3
17	Apocynaceae	2	1,0	2	0,4
18	Asclepiadaceae	1	0,5	1	0,2
19	Araliaceae	1	0,5	3	0,6
20	Arecaceae	5	2,5	6	1,2
21	Buddlejaceae	1	0,5	2	0,4
22	Berberidaceae	2	1,0	8	1,5
23	Betulaceae	2	1,0	3	0,6
24	Bignoniaceae	3	1,5	6	1,2
25	Buxaceae	3	1,5	3	0,6
26	Caesalpiniaceae	5	2,5	9	1,7
27	Caprifoliaceae	4	2,0	15	2,9
28	Casuarinaceae	1	0,5	1	0,2
29	Celastraceae	2	1,0	4	0,8
30	Celtidaceae	1	0,5	9	1,7
31	Cistaceae	2	1,0	4	0,8
32	Cneoraceae	1	0,5	1	0,2
33	Cornaceae	2	1,0	5	1,0
34	Corylaceae	2	1,0	3	0,6
35	Compositae	3	1,5	14	2,7
36	Chenopodiaceae	4	2,0	14	2,7
37	Ebenaceae	2	1,0	2	0,4
38	Elaeagnaceae	2	1,0	5	1,0
39	Euphorbiaceae	1	0,5	1	0,2
40	Ericaceae	1	0,5	1	0,2
41	Fabaceae	15	7,6	50	9,7
42	Fagaceae	2	1,0	10	1,9
43	Flacourtiaceae	1	0,5	1	0,2
44	Hamaelidaceae	1	0,5	1	0,2
45	Hippocastanaceae	1	0,5	1	0,2
46	Lauraceae	1	0,5	1	0,2
47	Liliaceae	1	0,5	8	1,5
48	Labiatae	1	0,5	1	0,2
49	Lythraceae	1	0,5	1	0,2
50	Malvaceae	2	1,0	7	1,4
51	Magnoliaceae	2	1,0	2	0,4
52	Meliaceae	1	0,5	2	0,4
53	Mimosaceae	1	0,5	1	0,2
54	Moraceae	5	2,5	11	2,1

55	Myrtaceae	5	2,5	16	3,1
56	Musaceae	1	0,5	1	0,2
57	Oleaceae	9	4,6	26	5,0
58	Pittosporaceae	3	1,5	3	0,6
59	Polygonaceae	2	1,0	6	1,2
60	Platanaceae	1	0,5	1	0,2
61	Punicaceae	1	0,5	1	0,2
62	Ranunculaceae	1	0,5	2	0,4
63	Rhamnaceae	3	1,5	7	1,4
64	Rosaceae	22	11,2	88	17,1
65	Rutaceae	4	2,0	8	1,5
66	Russaceae	2	1,0	2	0,4
67	Grossulariaceae	1	0,5	4	0,8
68	Sapinadaceae	1	0,5	2	0,4
69	Salicaceae	2	1,0	8	1,5
70	Simarubaceae	1	0,5	1	0,2
71	Solanaceae	2	1,0	5	1,0
72	Streuliaceae	1	0,5	2	0,4
73	Scrophulariaceae	1	0,5	1	0,2
74	Tamaricaceae	1	0,5	5	1,0
75	Titilaceae	1	0,5	2	0,4
76	Theaceae	1	0,5	1	0,2
77	Ulmaceae	2	1,0	6	1,2
78	Umbelliferae	1	0,5	2	0,4
79	Juglandaceae	2	1,0	3	0,6
80	Verbenaceae	2	1,0	6	1,2
81	Vitaceae	3	1,5	3	0,6
82	Gramineae	1	0,5	1	0,2
83	Juncaceae	1	0,5	2	0,4
84	Capparidaceae	1	0,5	2	0,4

Table 2. Vital forms of Trees and Shrubs Introducents

Forms	Amount of Species	Total amount, in %
1. Trees	239	45,8
2. Shrubs	279	39,0
3. Ivies	8	15,2

Table 3. The perianth color of Trees and shrubs introducents

The color of perianth	Amount of species	The total amount, in %
White	116	22,4
Red	78	15,1
Yellow	65	12,3
Blue	34	6,6
Green	221	43,0

4. The fruit types of trees and shrubs introducents:

For trees and shrubs introducents are below fruit types specific: *small box* - 99 species (19, 3%), *druped fruits* - 96 species (18,7%), *berries* - 114 species (22,2%), *small wings* - 49 species (9,5%), *beans* - 74 species (14,4%), *walnuts* - 27 species (5,3%), *cones* - 55 species (10,7%). In 1-3 species can appear another fruit types.

Table 4. The fruit types of trees and shrubs introducents

The type of species	The amount of species	The total amount, in %
Small boxes	99	19,3
drupe	96	18,7
berries	114	22,2
Small wings	49	9,5
bean	74	14,4
walnut	27	5,3
cones	55	10,7

5. The floristic zones of trees and shrubs introducents:

There is determined classification of introducents in below floristic zones: 236 species (44, 9%) *Europe*, 153 species (29, 1%) *Asia*, 92 species (17, 5%) *America*, 27 species (5, 1%) *Africa*, 18 species (3, 4%) *Australia*.

Table 5. The floristic composition of Trees and Shrubs introducents

Floristic zones	Amount of species	The total amount, in %
Europe	236	44,9
Asia	153	29,1
America	92	17,5
Africa	27	5,1
Australia	18	3,4

6. Ecological analysis of Trees and shrubs introducents:

During researches introducents are divided into 3 ecotypes: mezofits – 327 species (66,0%), xerofits 189 species (32,0%), hydrophytes 10 species (2,0%). There are dominated mezofit types in Absheron dry-subtropic zones (3).

Table 6. The ecological types of Trees and Shrubs introducents

Species	Amount of Species	The total amount, in %
mezofits	327	66,0
xerofits	189	32,0
hydrophyts	10	2,0

7. Trees and shrubs introducents useful economic profits:

Trees and shrubs introducents researched species in economic in one or another spaces are profitable plants. They are divided into 5 categories. Most of studied species are essential oil and medicinal plants. There are dominated essential oil and medicinal plants among 269 species (54,3%) medicinal, 88 species(17,8%) essential oil, 21 species(7,7%) melliferous, 23 species (4,7%) cosmetical, 38 species(4,6%) plants are used in food industry as *Laurus nobilis* L., Umbeliferae, Rutaceae, Lamiaceae, Myrtaceae. Obtained essential oil after researching of antimicrobial features is used in medical sector. From another side these plants have high decorative and phytoncid features are wide used in greening.

Table 7. The useful economical profits of Trees and Shrubs introducents

Species	Amount of species	The total amount, in %
medicines	269	54,3
Essential oil	88	17,8
melliferous	21	7,7
cosmetic	23	4,7
food	38	4,6

Economic profitable plant species are preventing in city area of anthropogenic pollination and they are forbidden for creating species richness and it is not advisable illegal picking them up.

8. Trees and shrubs introducents perspectiveness:

Introducents used in greening are divided into 3 perspective groups according to resistance of local soil-climate condition: I group – they are perspective species that they don't get damaged in winter; II group – relatively less perspective species: there are damaged the tip parts of shoots in winter; III group – less or not perspective species: In winter are damaged all terrestrial parts under snow cover, in spring they are again regenerated. According to researches 412 species (78,3%) refer to I group, 87 species (16,5%) refer to II group, 30 species (5,7%) refer to III group.

Table 8. The use in greening of trees and shrubs introducents

Species	Amount of species	The total amount, in %
I group (perspective species)	412	78,3
II group (relatively less perspective species)	87	16,5
III group (less and not perspective species)	30	5,7



9. These species can be used in different areas of greening: 464 species (88,2%) in single or in groups, 242 species (45,9%) in borders and in making of live hedges, 57 species (10,8%) in creating rockeries, 56 species (10,6%) in flower beds, 231 species(43,9%) in row planting. In contemporary the development phases of all species are used and hold normal in Absheron condition.

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