

The Importance of Siren in Greening

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Abstract: This article discusses the Siren plant, widely used in landscape construction and landscape architecture, as well as in landscaping of residential areas. The main objective of the study is to study the methods of selection of Siren, resistant to any climatic conditions and possessing high decorative qualities.

Keywords: Siren, variety, selection, introduction, hybrid, substrate, genus.

Introduction: Today, special attention is paid to the landscaping and improvement of residential areas. One of the most important tasks of landscaping is to create a healthy and full-fledged aesthetic natural environment for human life. In this sense, the field of landscaping works in conjunction with landscape construction and landscape architecture. The range of plant species for the landscaping sector in Uzbekistan is limited, and its expansion and improvement is important. Evergreen and flowering shrubs are also one of the most important parts of landscaping. Of the ornamental shrub plants suitable for planting in cities, which are resistant and long-lived and have a beautiful appearance, special attention should be paid to planting more common syren.

Syringa (*Syringa*) - a plant belonging to the Olive family, is a deciduous shrub or tree genus. There are 30 species of ornamental plants worldwide, mainly distributed in Eurasia. They are cultivated and cultivated in many countries. The most common and horticultural species of lilac are:

Syringa vulgaris — Common lilac

Syringa josikaea — Hungarian lilac

Syringa persica — Persian lilac

Syringa meyeri — Meyer lilac

Among these species, *Syringa vulgaris* is the most widespread and has many varieties. In Uzbekistan, common lilac (*S. vulgaris*), Persian lilac (*S. persica*), Chinese lilac (*S. chi-enensis*) and other species are grown [1]. The leaves of lilac are mainly simple, entire, sometimes serrated

or pinnately lobed. The flowers are small, white, pink, red. Bisexual, fragrant, racemose, bloom at the same time as the leaves emerge. The inflorescence of cultivated varieties reaches a length of 25-30 cm. The nasturtium grows quickly. In the southern regions, it blooms in April-May, and in the northern regions in May-June. The fruit is a two-celled pod [2].

The species of Siren is very suitable for gardens and courtyards due to the following features:

It blooms in early spring, which makes the landscape colorful and attractive. Fragrant flowers create a comfortable atmosphere in the summer. It is easy to care for, drought-resistant, and adapts to arid areas. It is widely used in landscape design.

In Uzbekistan, there are some varieties of nasturtium that bloom twice a year (in spring and autumn). They are mainly grown as an ornamental plant in the landscaping of residential areas [3]. The most common type of nasturtium is the common nasturtium, and there are also selected ornamental varieties. Nastarin grows up to 6 meters high and forms dense thickets. The lilac blooms in May, its flowers are white, inky in color, and it is a very decorative plant [4].

There are several effective methods for propagating lilac. They are as follows:

a) Propagation by cuttings

This method is the most popular and effective. 10–15 cm cuttings are prepared from young branches. The cuttings are planted in moist and fertile soil. Various phytohormones can be used to promote rooting.

b) Burying the branches (transplanting additional branches)

In the summer, the branches that have grown again are buried in the ground and transplanted as separate seedlings after a year.

c) Propagation by seeds

This method is rarely used, because the varieties may not survive. It is used only in natural conditions or by breeders.

d) Propagation by dividing the bushes. In this case, a large bush can be divided into several parts and each can be planted separately. Botanists recommend propagating nasturtium mainly from seeds. In this case, the fruits ripen in the fall, the winged seeds are separated, and they are about 1 cm long. The weight of 1000 nasturtium seeds is 5-9 grams. Vegetative reproduction and renewal are characteristic of nasturtium, and this method of plant propagation is often found in nature. Vegetative propagation methods are widely used in the propagation of valuable species that are important in the national economy. Seedlings propagated by vegetative propagation methods fully retain the genetic characteristics of the parents. Nasur is widely propagated by the method of grafting. In this case, the plant branch is rooted from the place where it touches the ground without separating from the mother plant and growing green. This is called grafting. A plant propagated by cuttings separates from the mother plant and begins to live independently. Additional roots are formed on the branches that are buried in the soil close to the surface. In order for the buried branch to take root, it is necessary to have shade and high humidity, which will accelerate the rooting process.

Bush division is the simplest method of vegetative propagation. This method is usually used to propagate rhizome plants. Some varieties of lilacs with strong bushes and a large number of suckers, that is, branches growing from the root or rhizome, can also be propagated in this way. The dug bush is divided into equal parts with a sharp shovel, pruner or knife, with each root having 2-3 branches or buds. Early spring-flowering lilacs should be divided in the fall. In addition, lilacs can also be propagated from cuttings. Sergul varieties are also propagated by grafting. Medicinal and ornamental hybrids of lilacs have been introduced in Uzbekistan, and much practical work has been done on their propagation methods.

The siren plant loves light, that is, the sun. It does not bloom in the shade. It grows well on moist, fertile, neutral soils. It does not need excessive water, but regular watering is required in dry periods.

Materials and methods. Rooting of lilac cuttings was carried out in 4 different substrates: ordinary soil, fertile soil substrate, sandy substrate (in a greenhouse) and sandy substrate in a greenhouse with mist irrigation. The effect of these substrates on the rooting of stem cuttings and the growth of rooted seedlings during the growing season was studied. The preparation of stem cuttings was carried out after the bushes entered the autumn dormancy period, in late November and early spring, before the sap movement began in them. The experiments were conducted in the following variants:

- cuttings prepared in late autumn were planted in previously prepared furrows in autumn;
- prepared in autumn, buried vertically in the soil in trenches and planted in spring;
- prepared in early spring and immediately planted in the soil.

To study the effect of cutting length on their rooting and seedling growth, 15 cm, 20 cm and 30 cm stem cuttings and a 0.01% solution of heteroauxin were used. The effect of heteroauxin on the rooting of stem cuttings for 14, 18 and 22 hours was studied. As a control, the cuttings were kept in plain water for 14 hours. To study the growth dynamics of seedlings during the growing season, the height of the seedlings, the height at the end of the growing season, the diameter and the degree of preservation were studied every month.

The quality assessment of seedlings grown vegetatively was carried out in accordance with the requirements of the state standard “Seedlings of decorative shrubs” GOST 26869–86. (KzDSt 322.15.04.2009).

Results and Discussion. Tables 1-2 below show the research analyses of the propagation methods.

Table 1 Propagation Methods and Conditions Used in the Study

№	Propagation Method	Varieties Used	Conditions	Duration	Materials/Methods Applied
1	Cuttings	<i>Siren vulgaris</i>	Nursery, 70–80% humidity	6 weeks	Treated with heteroauxin
2	Seed Propagation	<i>Siren persica</i>	Open field	3 months	Advanced care, irrigation regime
3	Division of Clumps	<i>Siren meyeri</i>	Fertile soil, 50% shade	4 weeks	In unpolluted soil
4	Grafting	<i>Siren josikaea</i>	Protected conditions (greenhouse)	2 months	On local <i>Siren</i> roots

Growth Indicators and Efficiency of Different Propagation Methods

№	Propagation Method	Sprouting Rate (%)	Average Growth Height (cm)	Survival Rate (%)
1	Cuttings	80%	22 cm	77%
2	Seed Propagation	65%	18 cm	57%
3	Division of Clumps	90%	25 cm	87%
4	Grafting	70%	20 cm	65%

The highest growth and survival rates were observed with the division method (90% growth, 87% survival). This method gave effective results in the shortest time, within 4 weeks. Cuttings also showed high results: 80% growth and 77% survival, with an average growth height of 22 cm. Propagation by seeds had the lowest rates (growth 65%, survival 57%). This method is more time-consuming and the growth rate is also slower. The grafting method gave balanced results: 70%

growth, 20 cm growth and 65% survival. The fact that it was carried out under protected conditions led to the stabilization of the result.

Conclusion: The conducted studies revealed that the most effective methods of propagation of syren plants are dividing the bushes (90% germination, 87% survival) and cuttings (80% germination, 77% survival). Cuttings treated with heteroauxin showed high results in rooting and growth. The length of the cuttings and the type of substrate had a significant impact on the results. The results of the study suggest that syren seedlings are an economically efficient and effective technology for growing, which allows for their widespread use in landscaping practice.

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