Vegetative propagation of mulberry (Morus, nigra L) for greening of roads

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ABSTRACT

Special attention was paid to the identification of highly scenic, promising, plant species resistant to various external harmful factors and the development of efficient and optimal methods of rapid reproduction as the priority directions of greening of highways in the world. In this regard, new varieties and forms of decorative species were created, the possibilities of trees and shrubs in modern landscaping were evaluated, and new methods of vegetative propagation were created.

Keywords: Mulberry (Morus, nigra L) plant, vegetative propagation, propagation by cuttings, annual shoots, length of cuttings, lignified and semi-lignified cuttings

Introduction

Globally, highway landscaping and landscape design are of great importance and interest in this field is constantly growing. For this reason, a lot of scientific and practical work is being carried out on the selection of types, varieties and forms of ornamental plants suitable for different climatic and soil conditions. The reason for this is that the flora first of all has a great impact on ecology and human health. It is known that the norm of green area in the city is 50 m2 per 1 population, cities with 40-60% green areas are exemplary, and cities with less than 10% vegetation are considered to have a negative ecological environment.

Special attention was paid to the identification of highly scenic, promising, plant species resistant to various external harmful factors and the development of efficient and optimal methods of rapid reproduction as the priority directions of greening of highways in the world. In this regard, new varieties and forms of decorative species were created, the possibilities of trees and shrubs in modern landscaping were evaluated, and new methods of vegetative propagation were created. It should be noted that representatives of Mulberry (Morus, nigra L) have a wide range of ornamental potential, development of fast and effective methods of reproduction by vegetative means, evaluation of the efficiency of use in landscaping is of important scientific and practical importance.

In order to continue the reforms implemented in all spheres, the development strategy of the Republic of Uzbekistan for the period of 2022-

2026 known as "New Uzbekistan" was developed and a "road map" project was created for its implementation. This strategy includes seven priorities. On August 31, 2021, the opening ceremony of the "New Uzbekistan Park" dedicated to the 30th anniversary of the Republic of Uzbekistan was held. The general appearance of the 104-hectare park is in the form of five kings of trees, corresponding to the directions of the action strategy. Peaceful areas have been established here where people can relax in the presence of nature. There is an increasing demand for seedlings of ornamental tree species in large quantities in greening the cities and villages of our republic. This puts important tasks before the growers of seedlings, such as breeding high-quality and low-cost decorative seedlings that meet standard requirements, as well as developing technology for rapid cultivation.

In this decision, it is decided to fundamentally improve the architectural and artistic quality of highways, greening and beautification works along the highways of our Republic - meeting the modern requirements of road safety and environmental protection issues. and the issues of fundamentally improving the quality of formation on a complex basis are envisaged. In connection with the execution of the decision, according to the order of the State Committee of Motorways dated September 12, 2017, the unitary enterprise "Oz yol kolamzorzamzar" and its territorial "Yol kolam" unitary enterprises in the regions were established done. Since the beginning of 2018, effective work has been carried out by these enterprises, which are not many since their establishment.

In the presidential decree, 288,000 ornamental, bushy, needle-leaved, tall and medium-sized tree saplings of various types were planted in the border areas along the public highways of the republic for 2018. During the first quarter of 2018, 505.1 km of greening and beautification works were carried out in the roadside areas adjacent to the border of the existing public highways in the Republic of Karakalpakstan and all regions, and about 230,000 saplings were planted.

For example, in Andijan region - 15.5 km, in Fergana region - 39 km, in Namangan region - 136 km, in Tashkent region - 8 km, in Syrdarya region - 141 km, in Jizzakh region - 13 km, in Samarkand region - 19 km, Karakalpog In the Republic of Estonia - 13 km, in the Kashkadarya region - 22 km, in the Surkhandarya region - 12 km, in the Navoi region - 18 km, in the Bukhara region - 48 km, in the Khorezm region - 22 km.

For these purposes, this year, the Republican Road Fund under the Cabinet of Ministers allocated 50 billion. It is planned to allocate 29.5 billion soums in the first quarter. Soum works have been completed. President of the Republic of Uzbekistan Sh.M. Mirziyoyev's decree of September 11, 2017 No. PQ-3262 "On measures to improve the architectural-landscape construction and landscaping system of highways", the Cabinet of Ministers of the Republic of Uzbekistan "Taking into account the requirements of modern architecture and urban planning This study serves to a certain extent in the scientific implementation of the tasks in the regulations of March 9, 2009 No. 59 on the "Rules for the Organization of Improvement Works of Settlements" and other regulatory legal documents.

Material And Research Methods

3317-90 (QzDSt 322.15.04.2009) was developed for carrying out field and production experiments, preparation of cuttings, care of seedlings, calculation of standard seedling yield, selection and evaluation of prospective forms.

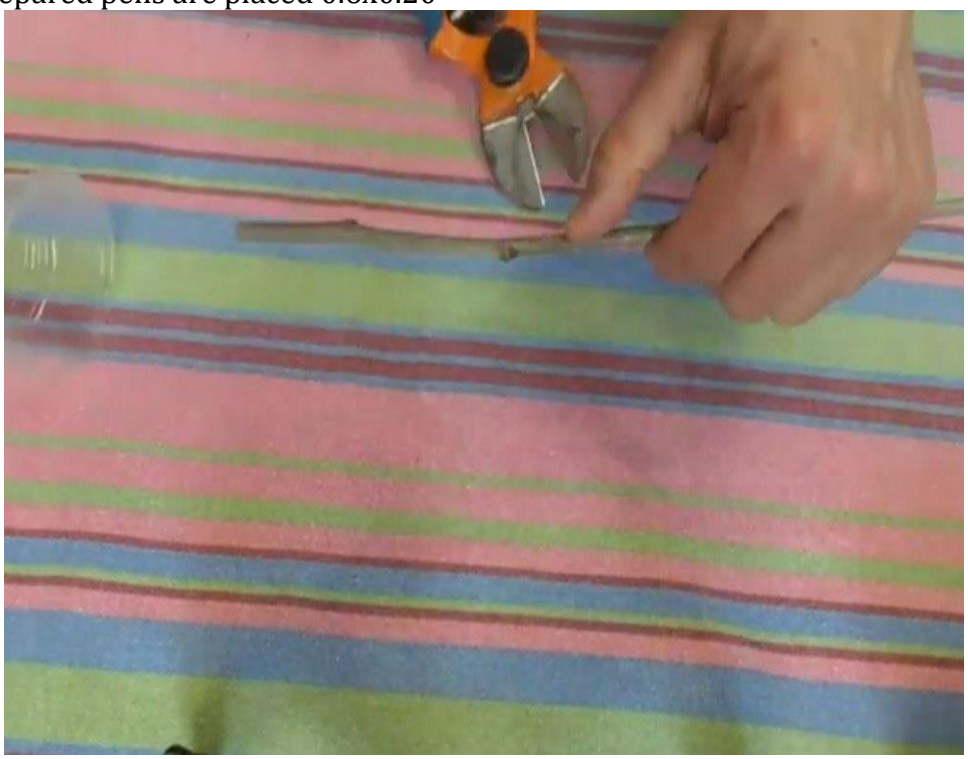
The study and assessment of the mulberry (Morus, nigra L) species in terms of scenic features in the landscaping of highways is carried out according to the method of N.I. Shtonda. The generally accepted criteria for statistical processing of the obtained data are also B.A. Dospekhov was performed according to the method "Metodika polevogo opyta". In calculating the economic efficiency of the obtained results, "Sample technological cards for the care and production of the main agricultural crops. For 2016-2020 (Part II)" was used (2015). It was implemented through the manual "Seyantsy derevev i kustarnikov", 26869-86 (QzDSt 322.15.04.2009).

Results Of Research

Vegetative propagation is asexual propagation of tree and shrub species, examples of which are propagation by cuttings, propagation by grafting, and propagation by grafting. All the properties of the mother plant and its economic value signs are fully preserved when the seedlings are propagated by the vegetative method. With this method, the work of growing seedlings is accelerated, and besides, it is not related to the yield of seeds.

When propagating by cuttings, one-year branches are cut into several pieces and a bundle of 100 pieces is buried in wet soil or sand. The length of the cuttings is 20-30 cm, and the thickness is 0.5-2.0 cm. Until the time of planting, they are planted in sandy (8-10 cm) pits or trenches with 60-70% humidity. is stored. If the prepared pens are placed 0.6x0.20 m, 83 thousand per hectare of land, and 92 thousand per 0.7x0.15 m. Prepared cuttings are planted in a straight line in a parallel row vertically or slightly inclined, leaving 2-5 cm above the ground, leaving one or two buds. Immediately after planting, it is watered and cultivated after 2-3 days.

One of the most common methods of vegetative reproduction is grafting. Since mulberry (Morus, nigra L) is a plant that has passed the conditions of introduction, rooting characteristics were studied based on 3 transplants from lignified and semi-lignified cuttings. Cuttings of two types of mulberry (Morus, nigra L). rosea Nichols- pink, f. violacea hort. - selected from purple forms. The cuttings were separated into 15-20 cm long pieces (see Fig. 1).



1 – picture. Preparation of mulberry (Morus, nigra L) cuttings

Prepared cuttings were frozen for 15-20 minutes in a mixture of control, kornevin and gummat stimulants. The sand was leveled evenly. For 15-20 minutes, 200 ml canisters of cuttings thawed in the stimulators. glue was applied to the glass in the first 10 days of March (see photo 2).

2 – picture. Pinning mulberry (Morus, nigra L) cuttings into a plastic cup with a container

Due to the high air temperature, the cuttings were lightly watered into the soil by dissolving 1 gram of the biologically active substance "Karnavin" in 1 liter of water (see photo 3). The top of the canister glue glass is covered with a polyethylene cover. The room temperature was ensured to be 20-24ºC.

Agrotechnical activities were carried out on time. The lower part of the glued cups with pencils was pierced in 4-5 places to ensure water permeability, and another glue was put on the cup. Pencils in plastic cups were placed in front of the window.

After 15-20 days, it was observed that new leaves appeared in the cuttings. (see picture 4). Pens were constantly maintained.

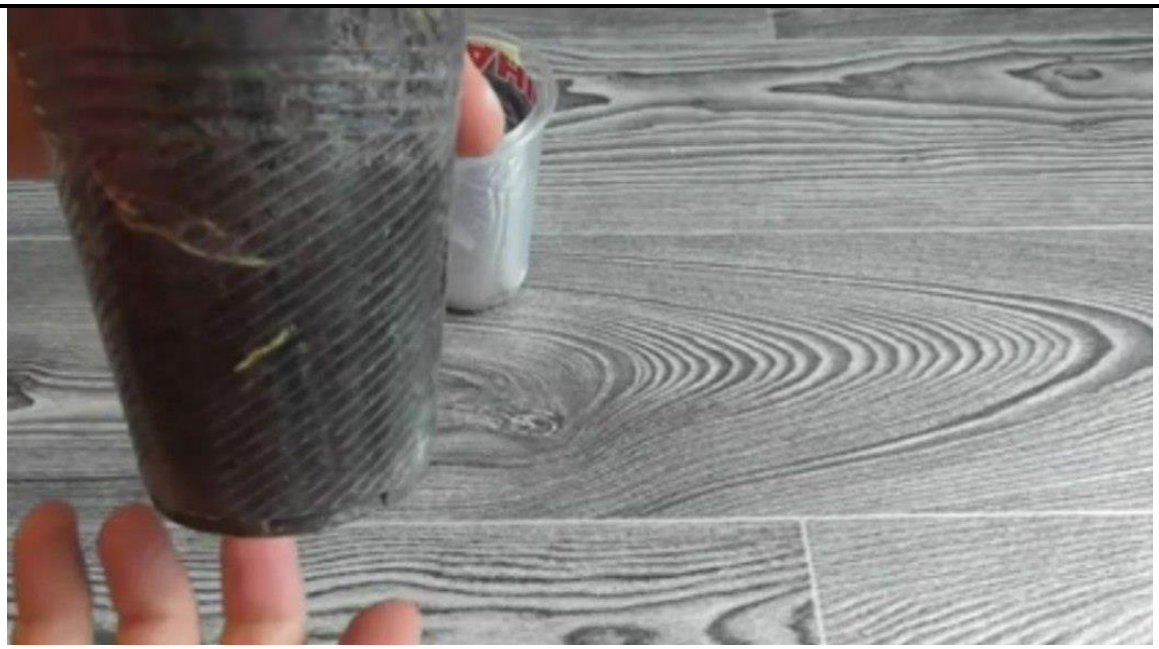
3 – picture. Lightly watering the soil

4 – picture. After 15-20 days, new leaves appeared on the cuttings

In order to facilitate the rooting of the cuttings in the glue cup, the lower leaves of the new leaves were removed (see picture 5).

5 – picture. Rooting of cuttings in a glass cup helps

The 1st return was increased during the spring season. Cuttings planted on March 2, 2022. Callus formation period: March 14-16, 2022. The length of the first thin branch is 15 cm, the length of the thick branch is 20 cm. Rooting time: observed on April 3, 2022 (see Figure 6).



6 – picture. Mulberry (Morus, nigra L) rooting from cuttings

Discussion Of The Results

The length of the main root in the first ten days of May is 22 cm, the length of the additional root is 30 cm.

The 2nd return was made during the summer. Cuttings planted on July 18, 2022. Callus formation period: July 29-31, 2022. The length of the first thin branch is 35 cm, the length of the thick branch is 38 cm. Root Release Time: August 15, 2022. The length of the main root is 38 cm, and the length of the additional root is 45 cm.

Conclusion

The distance between the branches is 5x4 cm, and it is planted to a depth of 2-3 cm. They are always kept moist, i.e. 90% humidity, and grown in conditions where the temperature does not exceed 30oC, green shoots take root within a month. In the autumn and winter months, they were covered with various straws, wood shavings, and films to protect them from the cold. The green shoots that took root in Koklam were transplanted to the nursery.

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