
EFFECT OF IRRIGATION ON GROWING TWO-YEAR-OLD MULBERRY SEEDLINGS USED IN HIGHWAY LANDSCAPING

Ubaydullayev Farkhod Bakhtiyarullaevich

Tashkent State Agrarian University, Agricultural Sciences

Doctor of Philosophy (PhD), Associate Professor,

Gulamkhodjaeva Shakhnoza Fakhritdinovna

Assistant, Tashkent State Agrarian University

Annotation

It is known that the use of advanced agrotechnical measures based on the soil and climate conditions for the cultivation of tree-like plants in nurseries gives good results. During the cultivation of seedlings, the demand for water and nutrients is different in different phases of the plant. Due to this, in the course of our research, agrotechnical measures were applied to seedlings based on plant and soil requirements in the phases of growth and development.

Keywords: Mulberry (*Morus, nigra L*) plant, soil moisture, frequent watering, watering regime, vegetation period, standard seedlings, optimal conditions.

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 kolamzorzhaz" 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 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 derehev i kustarnikov", 26869-86 (QzDSt 322.15.04.2009).

RESULTS OF RESEARCH

It is known that the use of advanced agrotechnical measures based on the soil and climate conditions for the cultivation of tree-like plants in nurseries gives good results. During the cultivation of seedlings, the demand for water and nutrients is different in different phases of the plant. Due to this, in the course of our research, agrotechnical measures were applied to seedlings based on plant and soil requirements in the phases of growth and development.

Agrotechnical measures are mainly aimed at maintaining soil moisture and sufficient supply of nutrients, and these factors are of particular importance in the growth and development of plants. During our research, the soil moisture of mulberry seedlings was kept in the order of 50-60%, 60-70% and 70-80% relative to FMC. In this case, soil moisture was determined at 0.5 meters in one-year seedlings, and 0.7 meters in the second and third years, and the irrigation rate was determined based on this moisture deficit (in this case, the coefficient of water use according to A.N. Kostyakov = 0 was equal to .9).

Observations on determining soil moisture, in turn, make it possible to determine the rate and duration of irrigation.

During the years of research, soil moisture before irrigation was maintained in accordance with the program in relation to FMC. The obtained soil samples were placed in a thermostat and dried at a temperature of +105 °C. In our studies, soil moisture before irrigation was 12.26 to 14.1% to maintain soil moisture at 50-60% relative to FMC, and 15.32% to 16.85% at 60-70% relative to FMC. and was observed to be 17.1% to 18.68% when compared to FMC at 70-80%. It required watering 4 times to keep the soil moisture at 50-60%, 6 times to keep it at 60-70%, and 8 times to keep it at 70-80%.

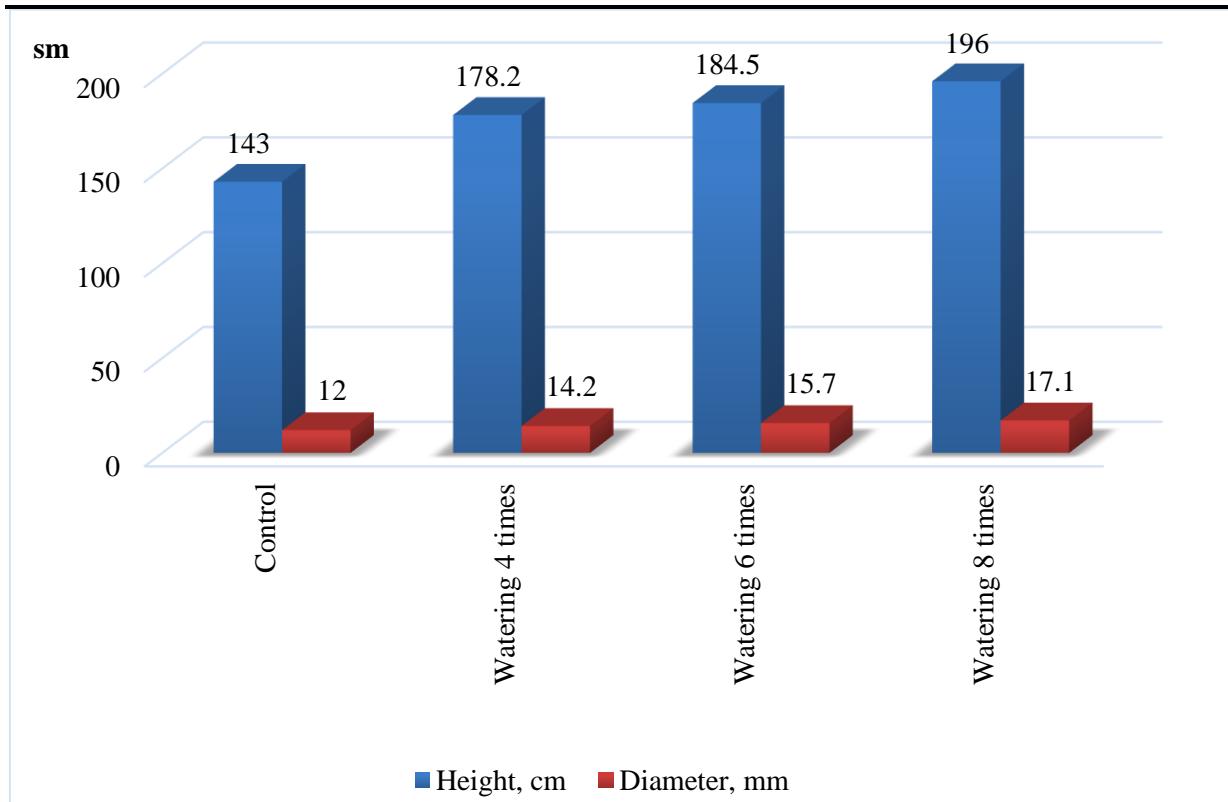


Figure 1. Effect of irrigation on two-year growth of mulberry seedlings

Observations and analyzes were carried out on the effect of the irrigation regime on the growth and development of two-year-old mulberry seedlings (see Figure 1).

DISCUSSION OF THE RESULTS

In the third year of our research, when mulberry seedlings were watered 4, 6, and 8 times while maintaining the regularity of previous years, it was observed that the height of the plant and the diameter of the root neck were higher than the control.

CONCLUSION

In the process of mulberry watering, the soil moisture and nutrient regime change dramatically, and the nitrification process increases. Salts in the soil are washed from the upper to the lower layers, the temperature and relative humidity of the soil change dramatically, and the pores of the soil are saturated with water. This, in turn, ensures quality and standard seedlings.

REFERENCES

1. Ubaydullaev, Farxod, et al. "Irrigation regime Influence on the growth and seedlings development of common fake chestnut (*Aesculus hippocastanum* L.) and Japanese safflower (*Sophora japonica* L.) in the highways landscaping." *E3S Web of Conferences*. Vol. 264. EDP Sciences, 2021.

2. Убайдуллаев, Ф. Б. "Влияние стимуляторов на рост сеянцев конского каштана." *Актуальные проблемы современной науки* 3 (2018): 115-119.
3. Убайдуллаев, Фарход Бахтияруллаевич, and Фарҳод Джураевич Хайтов. "АВТОМОБИЛЬ ЙЎЛЛАРИ ВА ШАҲАР КЎЧАЛАРИДАГИ САЙИЛГОҲ ҲУДУДИНИНГ ТОШКЕНТ ВОҲАСИ УЧУН БАЛАНСИ ВА ЯШИЛ ЭКИНЗОРЛАРИГА ТАВСИЯ ЭТИЛАЁТГАН МАНЗАРАЛИ ЎСИМЛИК ТУРЛАРИ." *Dbiology*: 95.
4. Bakhtiyarullaev, Ubaidullaev Farkhod, and Majidov Abdulaziz Norqobilovich. "Vegetative propagation of black mulberry (*Morus, nigra* L) recommended for landscaping roads and city streets." *Texas Journal of Agriculture and Biological Sciences* 12 (2023): 37-40.
5. Bakhtiyarullaev, Ubaydullaev Farkhod, Xaitov Farhod Djuraevich, and Ubaydullayev Abbosjon Azimjon Ogli. "TOSHKENT SHAHAR MIRZO ULUG'BEK TUMANIIDAGI DAHALARNI KO'KALAMZORLASHTIRISHDA DARAXTLARNING SANITAR GIGIENIK VA XUSUSIYATLARI." *Conferencea* (2023): 149-153.
6. Bakhtiyarullaev, Ubaidullaev Farkhod, and Ubaydullayev Abbosjon Azimjon OGLi. "SANITARY-HYGIENIC PECULIARITIES OF GREENING OF STREETS AND AUTOMOBILE STATIONS AND NATIONAL POINTS." *Galaxy International Interdisciplinary Research Journal* 11.2 (2023): 53-58.
7. Bakhtiyarullaev, Ubaidullaev Farkhod, Majidov Abdulaziz Norqobilovich, and Khudaybergenov Sardor Kamaraddinovich. "AGROTECHNICS OF CULTIVATION AND USE OF MULBERRY SEEDLINGS FOR PICTURESQUE LANDSCAPING OF HIGHWAYS." *Galaxy International Interdisciplinary Research Journal* 11.1 (2023): 363-370.
8. Убайдуллаев, Фарҳод Бахтияруллаевич, and Фарҳод Джураевич Хайтов. "TYPES OF ORNAMENTAL PLANTS RECOMMENDED FOR BALANCE AND LANDSCAPING OF PARKING AREAS ON HIGHWAYS AND WALKS IN CITY STREETS FOR TASHKENT OASIS." *Science and Innovation* 1.4 (2022): 95-100.
9. Bakhtiyarullaev, Ubaydullaev Farkhod, et al. "LANDSCAPE COMPOSITIONS BASED ON EVERGREEN SHRUBS IN THE LANDSCAPING OF CITY STREETS." *American Journal of Research in Humanities and Social Sciences* 10 (2023): 40-43.
10. Ubaydullayev, F., and Sh Gaffarov. "Selection of prosperous varieties of rosehips (*rosa* L.) And their seed productivity in Tashkent oasis, Uzbekistan." *E3S Web of Conferences*. Vol. 258. EDP Sciences, 2021.
11. Khatamovich, Yuldashov Yakubjon, Ubaydullaev Farkhod Bakhtiyarullaevich, and Khatamov Bakhramjon Yakubjanovich. "FEATURES OF PRODUCTIVITY, RIPENING AND GERMINATION OF JUNIPER SEEDS." *American Journal of Pedagogical and Educational Research* 10 (2023): 85-82.
12. Bakhtiyarullaev, Ubaydullaev Farkhod, Ubaydullayev Abbosjon Azimjon Ogli, and Aripov Xojiakmal Xojiakbarovich. "CHARACTERISTICS OF DECORATIVE

AND POISONOUS GAS-RESISTANT TREES FOR THE STREETS OF TASHKENT." *Open Access Repository* 4.02 (2023): 85-94.

13. Ubaydullaev, Farxod, Bakhramjon Khatamov, and Abdulaziz Majidov. "AVTOMOBIL YO'LLARINI KO'KALAMZORLASHTIRISHDA TUT (MORUS, NIGRA L) KO'CHATLARINI PARVARISHLASHDA MINERAL O'G'ITLARNI QO'LLASH VA SUG'ORISH ME'YORLARI." *Евразийский журнал академических исследований* 2.4 (2023): 75-81.

14. Isan ogli, Alisher Kholikov, Kasimkhodjaev Bokhodir Kuchkarovich, and Ubaydullaev Farkhod Bakhtiyorullaevich. "DETERMINING THE INFLUENCE OF CHANGES IN THE QUANTITY, SPEED AND COMPOSITION OF VEHICLES AND HIGHWAYS IN THE CITY AND THE DISTRIBUTION OF TRANSPORT." *American Journal of Pedagogical and Educational Research* 10 (2023): 167-174.

15. Baxtiyarullaevich, Ubaydullaev Farxod, and Abduraximov Muhammadali Muhammadibroxim o'g'li. "Pensilvaniya shumtoli (Fraxinus pennsylvanica Marsh.) tur va shakllarining bioekologik xususiyatlari, manzaraviyligi va ko 'chatlarini yetishtirish." *Science Promotion* 1.1 (2023): 32-35.

16. Baxtiyarullaevich, Ubaydullaev Farxod. "CHINORBARGLI ZARANG (Acer platanoides L.) va SEMENOV ZARANGI (Acer semenovii Rgl. Et Herd.) TURLARINING BIOEKOLOGIK XUSUSIYATLARI, MANZARAVIYLIBI VA KO 'CHATLARINI YETISHTIRISH TEXNOLOGIYASI." *Science Promotion* 1.1 (2023): 36-39.

17. Baxtiyarullaevich, Ubaydullaev Farxod, and Rafiqov Rustamjon Azamjon-o'g'li. "Toshkent shahridagi M39 yo'lidan M39b" Toshkent xalqa yo'li" shahobcha avtomobil yo'lining 12-22 km bo'lagini ko'kalamzorlashtirishda bir yillik va ko'p yillik gullardan klumbalar barpo etish." *Science Promotion* 1.1 (2023): 40-44.

18. Baxtiyarullaevich, Ubaydullaev Farxod, and Rafiqov Rustamjon Azamjon-o'g'li. "Toshkent shahri Uchtepa tumani mahalliy ahamiyatdagi "Farxod" ko'chasida harakat xavfsizligini oshirish." *Science Promotion* 1.1 (2023): 28-31.

19. Bakhtiyorullaevich, Ubaydullaev Farkhod, Khomidov Jalaldin Oktamkhoja ogli, and Abdurakhimov Muhammadali Muhammadibrokhim ogli. "BIO-ECOLOGICAL CHARACTERISTICS, ORNAMENTAL FEATURES AND TECHNOLOGY OF GROWING SEEDLINGS OF MAPLE (ACER PLATANOIDES L.), MAPLE (ACER SEMENOVII RGL. ET HERD.) AND PENNSYLVANIA ASH (FRAXINUS PENNSYLVANICA MARSH)." *American Journal of Pedagogical and Educational Research* 15 (2023): 173-186.

20. Гуламходжаева, Шахноза. "ИСПОЛЬЗОВАНИЕ АЙВЫ ЯПОНСКОЙ В ОЗЕЛЕНЕНИИ ГОРОДА ТАШКЕНТ." *Евразийский журнал медицинских и естественных наук* 3.5 (2023): 11-13.

21. Fakhritdinovna, Gulamkhodjaeva Shakhnoza, and Turatov Muzaffar Nuralievich. "Morphology Of Fruits And Seeds Of Chaenomeles Species." *Texas Journal of Agriculture and Biological Sciences* 6 (2022): 29-32.

22. Хакимова, М. X., and III. Ф. Гуламходжаева. "МАНЗАРАЛИ БОГДОРЧИЛИКДА ҚЎЛЛАНИЛАДИГАН ГУЛ ЎСИМЛИКЛАРИ ТУРЛАРИ ВА КОМПОЗИЦИЯЛАРИ."