



Influence of Soil Salinity on the Growth and Development of Unabi Varieties

Raimova Dilnoza Raimovna¹, Nortojiev Bobosher Sheralievich²

¹ Qarshi State University Teacher of the Department of agrochemistry and ecology

² Associate professor of Tashkent State Agrarian University

Annotation: In the scientific article annotation, research has been carried out on the organization and cultivation of unab plantations in the conditions of Kashkadarya voxa. During the experiments, 5 varieties of unabi, Ta-Yan-Sizo, u-sin-Xun, and recently introduced varieties of Mayabaizao, Jixinzao, Zanhuangdazao from China, morphobiological peculiarities and soil salinity were studied and analyzed, planted in the territories with 3 soil climatic conditions in the territories of Koson, Guzor, Kaspi district.

Keywords: Unabi. variety, soil, saline soil, conditions, phase, Bud, flowering, vegetation, pollen, introduction.

Relevance of the topic. Today, much attention is paid to expanding the assortment of fruit types in the world, building orchards plantations, increasing productivity and quality indicators of fruit products. Currently one of the world's subtropical fruit crop species, unabi plantations have a crop area of over 410,000 hektar with a gross yield of 7.5 million tonnes. Mamalakats, which grow unabi products in large quantities, are considered to be China, India, South Korea, Afghanistan, Pakistan, the United States and Russia. In the area of the Chinese mamalakati, unabi plantations of intensive type cover an area of more than 200 thousand hectares. Currently, in a globalized state of food safety, the organization of unabi plantations and the cultivation of their fruits, obtaining a quality harvest is an urgent task.

Some welds of the unabi plant are considered drought-resistant and relatively Shur-resistant. Therefore, the organization of unabi plantations in the southern regions of the Republic is an important task facing scientists, the unimproved use of land areas where the reclamation of the soil is not very good, the expansion of fruit fields.

The purpose of the study is to study the tolerance of plants to saline soils in the process of organizing and growing unab plantations in the conditions of Kashkadarya voxa

The objectives of the study include:

- ✓ analysis of the process of adaptation of unabi varieties to Oasis conditions;
- ✓ study of morphobiological peculiarities of unabi varieties;
- ✓ analysis of the growth and development of unabi varieties in saline soil conditions.

Research results. During the cultivation of Unabi varieties in the soil-climatic conditions of the Kashkadarya oasis, in addition to studying the drought, frost resistance of unabi plant varieties, their resistance to soil salinity was studied. Soil-climatic conditions the conditions of Chestnut and light chestnut soils are characterized by a large variety of soil cover and the distribution of salt concentration in the profile. The level and composition of soil salinity varies depending on the

terrain and the rocks below the ground, the salinity and depth of groundwater. Some varieties of unabi can be grown on soils with a salinity level of up to 25%. In our experiments, it was analyzed that the area under study is characterized by chloride-sulfate and sulfate-chloride types of salinity. Therefore, the bioecological justification of some varieties of unabi was also studied their resistance to salinity. As you know, it was observed in our experiments that representatives of the unabi complex have a wide range of natural growth and distribution in cultivation on saline soils of different levels. Therefore, the unabi variety belongs to the category of plants that are environmentally adaptable to the composition of some poisonous salts. From scientific sources we know that there are different opinions about the resistance of unabi varieties to salinity. In our experiments, unabi varieties showed the ability to grow even in salinity conditions. When determining the degree of salinity tolerance of unabi varieties, the chloride saline soil-the levels of certain growth and development of unabi plants during the growing season in climatic conditions were analyzed. In our experiments, it was found that unabi varieties studied are resistant to saline soil conditions due to the comparison of seedlings propagated from vegetative cuttings and seedlings per propagated in the graft. In our experiments, when studying the resistance of seedlings of unabi varieties to Shur, 2-3-year-old unabi plants are planted in special containers, and after the root Ridge and ground top (branch) jdal begin to develop, the soil is brought to the level of salinity of water with a na CL solution of 0.2 and 0.3% chlorine ions of various Soil moisture, on the other hand, was maintained at 70% full moisture capacity. The growth and development of seedlings and small-fruited varietal plants grown on unabi varieties graft was observed the effect of salinity (see table 4.11).

Resistance of unabi varieties to the degree of salinity of SU with a solution of NA CL of chlorine ions of various concentrations (2021-2023 YY)

Types of Unabi	Salt resistance of unabi trees level analysis %		
	Trees 2-3 years old		
	0,1 ва 0,2% Ha Cl	0,2 ва 0,3% Ha Cl	0,3 ва 0,4% Ha Cl
unabi varieties bred from vegetative cuttings (control)			
Та-янг-зао	76	70	65
У-син-хун	78	72	68
Маябаизао	79	73	70
Жихинзао	80	76	71
Занхуангдазао	79	72	68
Unabi varieties grown in melkoplodny grafting			
Та-янг-зао	80	78	76
У-син-хун	82	78	75
Маябаизао	86	79	75
Жихинзао	88	80	78
Занхуангдазао	84	79	76

We can see from the table data that unabi plant plants propagated from vegetative cuttings (control) with a Na CL solution of 0.1 and 0.2% chlorine ions of various concentrations showed tolerance of 76% in Ta-Yang-Zao variety when grown at salinity level, 78% in U-sin-Xun variety, 79% in Mayabaizao variety, 80% in Jixinzao variety, and 79% in Zanhuangdazao variety. Unabi seedling concentration with Na CL solution of 0.2 and 0.3% chlorine ions showed tolerance of 70% in Ta-Yang-Zao variety, 72% in U-sin-Xun variety, 73% in Mayabaizao variety, 76% in Jixinzao variety, and 72% in Zanhuangdazao variety.

Unabi seedling concentration was found to tolerate 65% in Ta-Yang-Zao variety, 68% in U-sin-Xun variety, 70% in Mayabaizao variety, 71% in Jixinzao variety, and 68% in Zanhuangdazao variety when grown with Na CL solution of 0.3 and 0.4% chlorine ions. It is worth noting that the concentration of SU with a na CL solution of 0.1 and 0.2% chlorine ions showed a positive result in

relation to the high concentration of salinity when growing unabi varieties at the level of salinity. When comparing varieties Aro in bun, it was observed that the salt tolerance indicators of Mayabaizao, Jixinzao, Zanhuangdazao varieties were slightly higher. In our experiments, the results of seedlings of unabi varieties grown on Melkoplodny grafts at the age of 2-3 years were known when analyzing the growth and development rate of plants in a given concentrated salinity. Plants were found to tolerate 80% seedlings in the TA-Yang-Zao variety, 82% in the U-sin-Xun variety, 86% in the Mayabaizao variety, 88% in the Jixinzao variety, and 84% in the Zanhuangdazao variety when grown at salinity level with a Na CL solution of 0.1 and 0.2% chlorine ions of various concentrations. Unabi seedling concentration with Na CL solution of 0.2 and 0.3% chlorine ions showed tolerance of 78% seedlings in Ta-Yang-Zao variety, 78% in U-sin-Xun variety, 79% in Mayabaizao variety, 80% in Jixinzao variety, and 79% in Zanhuangdazao variety. Unabi seedling concentration with Na CL solution of 0.3 and 0.4% chlorine ions showed tolerance of 76% seedlings in Ta-Yang-Zao variety, 75% in U-sin-Xun variety, 75% in Mayabaizao variety, 78% in Jixinzao variety, and 76% in Zanhuangdazao variety. Experiments have shown that Unabi varieties grown in Melkoplodny grafts, with a concentration of 0.1 and 0.2% of chlorine ions na CL solution, showed relatively good results compared to high control (unabi varieties bred from vegetative cuttings) when Su is grown at salinity levels. In this case, when comparing varieties Aro, the salinity tolerance indicators of Mayabaizao, Jixinzao, Zanhuangdazao varieties were at a high rate. When the growth and development of unabi plant varieties in different salinity concentrations was analyzed, it was observed that there were certain changes in plant organs. It was found that the decrease in growth processes of the plant was recorded in the range of 23.3-24.5%. The condition of its plants, when the varieties were compared Aro, the unabi varieties grown in Melkoplodny grafts were slightly better in performance. In the case when the concentration of salinity in plants was relatively high, the presence of leaf edges in a brown-looking salt in plants, that is, there were cases of burns. An experiment in seedling growth in salt solutions S1 at different osmotic pressures in the detection of toxic concentrations found that seedling growth rates decreased by 40-45%. In this case, as a result of an increase in osmotic pressure, the growth rate of plants decreases sharply. Plants develop brown necrotic spots on BRGs at osmotic pressure of 0.6 MPA, and at 0.9 mpa it was observed that most seedlings have died. When the limits of the resistance of the unabi plant varieties to chloride salinity are experimentally studied, we will be able to mention that it is possible to successfully grow them on soils with a chlorine ion content of 0.1%. The area under study (unabi maintained area) is characterized by droughts, hot winds, cold winters, low precipitation, and large diversity of soil cover, and varying concentrations of toxic salt. This condition limits the growth and development of a large proportion of plant species in these areas. Comprehensive environmental and physiological studies of the ability of the unabi plant (subtropical plant) to adapt will be able to determine the indicator characteristics that allow you to assess and predict the degree of adaptation depending on the variety of stress factors inherent in the conditions of the Kashkadarya Oasis. Ecological and physiological indicators will be of great importance for assessing the adaptation of O'nabi plant varieties to environmental factors that limit their growth and development. The rapid adaptation of plants to external environmental factors in response to the influence of unfavorable factors is classified according to general laws. In our experiments, it was observed that mainly small-fruited varieties, with the highest degree of drought resistance and resistance to low temperatures and chloride salinity, stood out compared to other studied unabi varieties. The process of adaptation of unabi varieties to new conditions occurs at the cellular, organ and organism level. Different water composition and water retention capacity, different levels of morphological variability contribute to a change in water scarcity in the leaves of unabi varieties. The similarity of unabi plant organisms to one another is characterized by the varietal classification and specificity of the plant age of adaptation of plants to low temperatures. As a result of studying their growth and development during our experiments, the degree of damage in the autumn and winter periods was determined. Plant branch hardiness is based on gradient changes in temperature and water content, which indicates that the plant has not completely ended the growing season.

Mechanisms and methods of adaptation of unabi varieties have been identified in the kashkadarya Oasis. Zanhuangdazao (large-fruited); Mayabaizao (medium-fruited); Jixinzao (small-fruited). On

the basis of these indicators, unabi varieties were analyzed to a certain extent, resistance to drought conditions, dry low temperatures and soil salinity, and a certain positive result was achieved. Unabi cultivars have been observed to have xeromorphism i.e. thickening of leaf plates and epidermis cells, an important indicator of plant adaptation. The Jixinzao variety from the small-fruited unabi Variety, the limits of its tolerance to chloride salinity, were experimentally analyzed and showed them to grow and develop well in soils with a chlorine ion content of 0.1%.

In conclusion, it is necessary to note that the Kashkadarya Oasis was observed in our experiments that the direct impact of soil-climatic conditions on the growth and development of trees in the cultivation of unabi in soil climates is high. It is no place to mention that seedlings are well grown and developed due to the tolerance of soil-climatic conditions and the ecological environment of the Oasis, and especially the rapid capture of grafted seedlings.

List of literature used.

1. Aliev, X.A. Perspective introduksii subtropicheskix Kultur V Novie agroekologicheskie usloviya / X.A. Aliev, M.D. Mukailov, B.S. Gasanbe-Kov // problemi razvitiya APK regiona. - 2011. - №4(8). - S. 11-12.
2. Juchenko, A.A. Selection rasteniy na ustoychivost K deystviyu Abio-ticheskix I bioticheskix strestorov / a.A. Juchenko / / Nauchnoe obespechenie ustoychivogo razvitiya selskoxozyaystvennogo proizvodstva v zasushlivix zonax Rossii: SB. mater. nauch. sessii. - M., 2000. - Ch. II. - S. 5-18.
3. Zagirov N.G., Ibragimov H.A., Mamerzaev Sh.S. Ustoychivost subtropicheskix Kultur K zimnim povrejdeniyam v Yujnom Dagestane // sbornik statey mejdunarodnoy nauchno-prakticheskoy konferencii: "Osnovnie problem, tendentii I perspektivi ustoychivogo razvitiya selskoxozyaystvennogo proizvodstva". - Vol 1. - Makhachkala, 2006. - S. 228-229.
4. Carnatovskaya, M.Yu. Zizyphus jujuba Mill. - perspektivny Istochnik biologicheski aktivnix vetshestv / m.Yu. Carnatovskaya, A.E. Paliy, O.A. Grebennikova // Biologicheski aktivnie vetshestva - izuchenie I ispolzovanie: mater. mejd. nauch. conf. - Minsk: Centr. bot. sad., 2013. - S. 3-6.
5. Xolmamatovich X. U., Baxtiyarovna I. F. SELECTION OF HIGH-YIELDING, EARLY-RIPENING VARIETIES OF CHINESE CABBAGE IN VEGETABLE CROPS //Journal of Academic Research and Trends in Educational Sciences. – 2022. – T. 1. – №. 10. – C. 289-295.
6. Xolmamatovich X. U. et al. JAHON GENOFONDIDAN FOYDALANISH ASOSIDA PEKIN KARAMI (BRASSICA RAPA SUBSP. PEKINENSIS. L) NING ERTAPISHAR XUSUSIYATGA EGA NAMUNALARINI TANLASH //The Role of Technical Sciences in IV Industrial Civilization: International Scientific and Practical Conference (UK). – 2023. – T. 3. – C. 206-209.
7. Хуррамов У. Х. и др. Результаты Сортоиспытания Пекинской Капусты При Повторном Сроке Посадки В Узбекистане //Central Asian Journal of Theoretical and Applied Science. – 2022. – Т. 3. – №. 10. – С. 115-120.
8. Asatov S. H. et al. Agro-climatic conditions of Uzbekistan and their compliance with the requirements of Chinese kale //E3S Web of Conferences. – EDP Sciences, 2021. – Т. 244.
9. Хуррамов У. Х., Топилов Х. А., Рўзиматов А. З. Почвенно-Климатические Условия Узбекистана И Соответствие Их Требованиям Китайской Листовой Капусты //Central Asian Journal of Theoretical and Applied Science. – 2022. – Т. 3. – №. 10. – С. 102-109.
10. ХОЛМИРЗАЕВ И. Х. У., ХУРРАМОВ У. Х. ЭРТАГИ МУДДАТДА АЙСБЕРГ САЛАТИНИ ТУРЛИ УСУЛЛАРДА ЕТИШТИРИШ ТЕХНОЛОГИЯСИ //ЎЗБЕКИСТОН АГРАР ФАНИ ХАБАРНОМАСИ. – С. 43.
11. Xolmamatovich X. U., Kamol o'g'li I. H. HIMOYALANGAN YER MAYDONLARDA GULKARAM (BRASSICA OLERACEA VAR. BOTRYTIS) YETISHTIRISHDA SERHOSIL

NAV VA DURAGAYLARNI TANLASH //AGROBIOTEXNOLOGIYA VA VETERINARIYA TIBBIYOTI ILMIY JURNALI. – 2023. – T. 2. – №. 8. – C. 1-7.

12. Kholmamatovich K. U., Choriyevich N. I., Nasimovna B. S. Results of Varietal Testing of Peking Cabbage with a Repeated Planting in Uzbekistan //International Journal on Orange Technologies. – 2020. – T. 2. – №. 10. – C. 20-23.
13. Kholmamatovich K. U., Olimovich B. F. The Importance of a Nutrient-rich, Fertile Amaranth Plant Salad //International Journal on Orange Technologies. – T. 2. – №. 10. – C. 40-42.
14. Kholmamatovich K. U. et al. Selection of Fruitful Varieties of Peking Cabbage //INTERNATIONAL JOURNAL OF BIOLOGICAL ENGINEERING AND AGRICULTURE. – 2022. – T. 1. – №. 3. – C. 20-23.
15. Holmamatovich K. U. et al. The technology of growing peking cabbage in various planting schemes in uzbekistan //International Journal of Psychosocial Rehabilitation. – 2020. – T. 24. – №. 1. – S. 1605-1610.
16. Holmamatovich K. U. et al. THE PERIODS OF PLANTING OF SEEDS OF PEKING CABBAGE AS REPEATED CULTURE IN UZBEKISTAN //Problems and solutions of advanced scientific research. – 2019. – T. 1. – №. 1. – S. 18-22.
17. Holmamatovich K. U. et al. TECHNOLOGY FOR GROWING PEKING CABBAGE FROM SEEDLINGS IN A REPEATED PERIOD // "ONLINE-CONFERENCES" PLATFORM. – 2021. – S. 37-41.
18. Holmamatovich K. U. Technology of cultivation of peking cabbage in various schemes //Asian Journal of Multidimensional Research (AJMR). – 2018. – T. 7. – №. 9. – S. 418-424.
19. Holmamatovich K. U. et al. TECHNOLOGY OF CULTIVATION OF PEKING CABBAGE IN VARIOUS SCHEMES //World Bulletin of Management and Law. – 2021. – T. 3. – S. 16-20.
20. E3S Web of Conferences **244**, 02023 (2021)
21. E3S Web of Conferences **452**, 01013 (2023)
22. E3S Web of Conferences **452**, 01012 (2023)