



DEVELOPMENT OF TECHNOLOGY FOR CULTIVATION OF SUPPLYING SEED FRUITS ON SOLANCHOV SOILS

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ABSTRACT

This work is devoted to the problem of growing apple planting material on clonal rootstocks, intended for creating high-intensity gardens on saline soils. The adaptability of clonal rootstocks and varieties grafted on them to growing conditions in the Khorezm region is considered, an assessment of the rootstocks is given when propagating in mother plants, by cuttings, when growing seedlings.

KEYWORDS: *rootstocks, undersized, apple trees, mother plant, nursery.*

INTRODUCTION

The main task of horticulture is to provide the population with high-quality fruits and berries. One of the ways to intensify horticulture is the use of low-growing clonal rootstocks. Early maturity, high yield, good fruit quality, ease of crown care, and lower harvesting costs are the main advantages of plantings of low-growing trees. During the propagation of clonal rootstocks and the cultivation of seedlings of fruit crops, one of the main elements of intensification is the establishment of industrial gardens on low-growing rootstocks. This makes it possible to reduce the size of fruit trees, which facilitates their care and harvesting, accelerates their entry into fruiting, increases the yield per hectare and the quality of the products obtained. The purpose of our research was to test a wide range of different types of low-growing clonal apple rootstocks with a high multiplication ratio, well compatible with a wide range of intensive varieties in the conditions of the mother garden, nursery and apple garden on saline soils of the Khorezm region. The following components were taken into account by observation in the conditions of the mother liquor: low-growing rootstocks; the number of bushes of each rootstock, 150-200 pcs; the degree of rooting of 6 intensive low-growing apple rootstocks; growth dynamics of shoots in the mother liquor.

To solve the set tasks, it is necessary to select rootstocks that have high ecological adaptability, easily propagate vegetatively, provide a high yield of seedlings of zoned and promising varieties. Weak

rootstocks that increase the productivity of fruit growing are widely used in orchards in all natural zones of Uzbekistan. In Uzbekistan, there are about 10 thousand hectares of such gardens, including those in flat forms. Such plantations have many advantages, so the task is to further develop them widely [1]. Two types of such low-growing stocks in our republic are best known - M9 (dwarf) and M2 (polycarbonate). During the research period, we followed the nature of the growth and development of a large group of rootstocks with their free growth, without scion. We proceeded from the well-known thesis about the influence of the rootstock on the scion.

EXPERIMENTAL PART

The results of studies of 26 types of low-growing rootstocks suggest that the following six types are most promising for the irrigated fruit growing zone of Uzbekistan: M7, M9, MM102, MM104, MM105, MM106. For areas with severe winters, four types can be recommended: M7, M9, MM102, and MM105; for weak and medium saline soils - type M9; for areas with a relatively insufficient supply of irrigation water, the types M7, M9, MM102, MM105, MM106 are better suited. The M9 rootstock proved to be relatively the most salt-tolerant. According to [2], the yield of low-growing rootstocks at a young age (5-7 years) is different: from weak (1-6 kg per tree) for M9, and to medium (6-10 kg) for M7, MM104, MM106 and high (11 - 20kg) for MM102, MM105, MM106.



DESCRIPTION OF THE RESULTS AND THEIR DISCUSSION

The research results have shown that trees with dwarf growth, with a compact crown, and a limited feeding area begin to bear fruit as early as the second year after planting in the garden, gain productivity faster and give much more intensely colored sugary large fruits than apple trees of the same varieties, but on vigorous rootstocks.

One, in our opinion, very important detail: it is necessary to correctly determine the date of vaccination this spring or next. On a branch of a seedling that overwintered without any damage, they make an oblique long (5 cm) cut and look. If a lot of juice is released, the cut becomes damp from it, the wood and bark are light green, then they are inoculated in the same spring, and if there is little juice or the branch is a little dry, then refrain from

grafting until next spring. At the same time, the number of skeletal branches is brought to three or four.

In our case, the seedlings planted in the saline soils of the Khorezm region formed a fruit wall, where we planted them in a row at a distance of 2-2.5 m from one another and 3-3.5 m between rows. In the fruit wall, the conductor was cut at a height of 2.5–3 m into a lateral branch to limit the tree height. [4] In this case, branches directed in a row were chosen for the skeleton of the crown, and they were grafted, and those branches that are directed in the aisle, or bent to a horizontal position (tied with twine), tied into a weak knot and left them so until the trees bear fruit, and then cut into a ring near the trunk, leaving no hemp. The wounds were covered with garden varnish (petrolatum) or oil paint on natural linseed oil, they overgrown faster.

Growth dynamics of a branch of one-year late-ripening apple trees grown on medium-tall stocks M7, MM102, MM106

Rootstock name	Name of late varieties of apple trees	Months				Growth sum for 4 months, from standard	
		May	June	July	August		
M7	Renet Simerenko (control)	10	12	18	23	13	100
	Baboarab	14	15	20	25	11	84,6
	Summer Hazorasp	12	17	23	27	15	115,3
	Red Apple	11	16	20	25	14	107,6
	Kawrak	8	14	21	27	19	146,1
MM102	Winter Hazorasp	12	16	20	26	14	107,6
	Renet Simerenko (control)	18	22	28	32	14	100
	Baboarab	19	24	29	31	12	85,7
	Summer Hazorasp	17	22	28	29	12	85,7
	Red Apple	15	17	25	32	17	121,4
MM106	Kawrak	20	24	27	30	10	71,4
	Winter Hazorasp	18	24	28	31	13	92,8
	Renet Simerenko (control)	10	15	18	22	12	100
	Baboarab	12	17	20	23	11	91,6
	Summer Hazorasp	12	20	23	27	15	125
MM106	Red Apple	10	12	17	23	12	100
	Kawrak	15	25	26	28	13	108,3
	Winter Hazorasp	13	20	31	31	18	150

Analysis of the data in the table shows that the late-ripening varieties Letniy Khazorasp and the local variety Zimniy Khazorasp were strongly growing when grafted onto the MM106 rootstock and for 4 months their growth totals were 15-18 cm, compared to the control they exceed by 25% -50%. But, the best fruit branches between the seedlings grown on the MM102 rootstock during these periods turned out to be from the Red Apple variety by 17 cm. This, in comparison with the late-ripening Renet Simirenko, is 21.4% higher, and the other varieties showed a slow growth of 71.4-92.8 %, compared to

control. Growing seedlings of medium-sized rootstock M7 showed that in the total amount of growth of seedlings compared to rootstocks MM102 and MM106, they were lower.

Conclusions and recommendations. In conclusion, it should be noted that the prospects for the development of the production of high quality seedlings suitable for the establishment of intensive plantings of apple trees on low-growing rootstocks are great.[3] But this process is currently restrained by the weak rates of development of intensive mother plants, which could provide the required quality of



rootstocks. In order to ensure the best results of the technology of green cuttings of vegetatively propagated apple rootstocks, it is recommended:

Use the selected most productive forms of rootstocks;

- cutting cuttings from irrigated mothers of young age (up to 2 years);
- cuttings should be carried out in the middle of the phase of intensive growth of shoots (first decade of July) with green cuttings 25-27 cm long and 3-4 mm thick in the upper part;

All this indicates the need and relevance of research aimed at working out the technology of cultivation of intensive mother plants of weakly growing stocks in different zones of gardening in Uzbekistan.

LIST OF USED LITERATURE

1. Islamov S.Ya. *Reproduction of weak rootstocks // Agriculture of Uzbekistan. - Tashkent, -2005, -p. 25-30*
2. Yusupova M.S. *Modern technologies for breaking down clonal rootstocks and growing seedlings of fruit crops in the conditions of the Republic of Uzbekistan. // Agricultural science - to agriculture: collection of articles: in 2 books. / VIII International Scientific and Practical Conference (6-7 February 2013). - Barnaul: RIO AGAU, 2013. - Book. 2. - P. 303-304.*
3. Yusupova M.S. *Growth and development of apple seedlings on vegetatively propagated stock in a nursery. // "Agrar tarmoq itisodiyotini innovation rivojlantirish va agrotechnologyalar samaradorligini oshirish yillari" mausuidagi conference maruzalari teplami (November 8, 2013). - Toshkent, 2013. -- B. 48-49.*
4. Astanakulov T.A., Narzieva M.S., Gulyamov B.Kh. *The basics of fruit growing. Tutorial. - Tashkent. 2010, -316 p.*
5. M.S.Yusupova., B.Gulyamov. *Analysis of weak clonal podvov, rovyshayushchix productivity of fruit. // J. Agro science. №2, 2013, pp.41-42.*
6. O.Mirzoxidov, E.Hamdamaeva, L.Kholmiraeva, Z.Tojibaeva. *Quality indicators of apple seedlings in intensive horticulture. // J. Agro science. №1, 2017, p.43-44.*
7. Yusupova M.S., Otaniyozov L.A. *Development of nursery in some lands of Khorezm region. // Collection of articles of the Republican scientific-practical conference "Problems and solutions for the effective use of agro-technologies in the cultivation, storage and processing of fruit and grape products" (March 25, 2016). - Toshkent, 2016. - B. 84-87.*
8. Yusupova M.S. *Growing of low-grafted seedlings planted in saline soils of Khorezm region. // Proceedings of the international scientific-practical conference "The role and importance of fruit and vegetable viticulture in ensuring food security in Uzbekistan" (May 25, 2017). - Toshkent, 2017. - B. 108-110.*