

The Efficiency Procedure and Time of Organization Nutritious Mulberry Plantations from Ring Cuttings in Khorezm Condition

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Abstract: *The article reveals the research on the effectiveness of high-quality mulberry leaf cultivation in Khorezm region on the basis of the organization of productive mulberry seedlings and intensive mulberry seedlings in the optimal scheme through the ringing of woody branches in the vegetative propagation of regionalized mulberry varieties. It is important to study the methods and timing of formation mulberry seedlings, which have their own roots. The germination of branches from cuttings planted horizontally (lying) in the soil varies depending on the variety of the mulberry, from which part of the branches of the mother plant the cuttings were taken. When the cuttings are planted in a horizontal position, they produce 3-5 branches along the entire length (horizontal). During the growth process, it was observed that some branches dried. The main part of the branches in the cuttings developed in moderate rate throughout the growing season. All plants sprouting from cuttings were left on the surface. If the shoots sprout 3-4 times from the cuttings, the strongest is left and the rest are removed. The earlier seedlings started to be grown, the weaker seedlings in the soil will not be able to absorb nutrients. As a result, good growth of the remaining seedlings is achieved. Formation is performed from June 1 to June 10 in the territory of Northern Khorezm. In order to thicken the seedlings, the side branches are removed by pruning in an annual plantation. As a result of the formation method to thicken the seedling body, the main nutrients is directed for thickening the body rather than to the side branches.*

Keywords: mulberry variety, hybrid, shoot, ringed, hard cutting without leaves, productive mulberry seedling, formation, leaf yield, nutritional value, feeding value

1. Introduction

A wide range of work is being carried out in our country to strengthen, develop and expand the nutrient base of mulberry silkworms as well as to expand intensive high-nutrient mulberry trees, create and introduce new varieties of mulberry that are suitable for silkworm hybrids.

At the same time, to study the mechanism of influence of mulberry cuttings, seedlings and saplings on the adaptation of different regions of the country to the natural climate, rooting, germination and growth dynamics of cultivars and leaf yield and increase the effectiveness of their introduction by applying new innovative ideas is being required great attention as well as further expansion of scientific research work, in particular, the introduction of new advanced developments and technologies into production.

In this regard, the President of the Republic of Uzbekistan dated on March 20, 2018 “On additional measures for further development of the silkworm industry” №PD 3616 and dated on January 17, 2020 “On additional measures to develop the silkworm feed base in silkworm industry” assigned to introduce of new innovative techniques and technologies in the field of silkworm breeding in the resolution № PD- 4567 create of new special intensive mulberry plantations, expansion of mulberry groves throughout the country, application of water-saving irrigation technologies in mulberry growing, created silkworm rearing facilities, radical overhaul of existing facilities, to use for future for mulberry silkworm rearing. Besides, the Action Strategy for the Development of the Republic of Uzbekistan

for 2017-2021 pays special attention to the development of agriculture, especially sericulture and increasing its export potential.

In this regard, the mulberry silkworm feed base, which is basis of silkworm breeding, plays an important role in strengthening mulberry breeding, taking into account the natural climatic conditions of the regions, increasing the number of mulberry varieties and the introduction of advanced scientific developments and intensive agro-technologies in production.

2. Materials and Methods

Independent researcher took during the experiment international cuttings from SANIISH-5, Japanese variety Kinriu, Uzbekistan, seedless, winter-hardy varieties of Tajikistan and Kokuso-70 × Pioneer, Pobeda x pioneer hybrid combinations and ringing cuttings and as controlled type from ringless Kokuso-70 × Pioneer hybrid.

A detailed description of the varieties (leaves, shoots, buds and roots) was given during the research. The data were collected in 3-4 years of the research and mathematical-statistical analysis was performed.

All studies were conducted in 4 variants, for which the following objects and materials were selected.

The main objects and materials for research:

- 1) Mulberry seeds;
- 2) Mulberry seedling;
- 3) Mulberry leaves;

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- 4) A garden's knife for ringing the mulberry;
- 5) Garden scissors for pruning mulberry shoots;
- 6) Garden saw for cutting mulberry shoots;
- 7) Necessary inventory for storing cuttings.

3. The purpose of the Research

The experiment was carried out in Khorezm region on the basis of weakly saline typical soils, and in the second year on the farm named after Mukhamad and Sanoat farmer of Khazarasp district.

In the condition of Khorezm region, the cultivation of valuable mulberry varieties and high-yielding mulberry varieties through the propagation of productive mulberry seedlings and intensive bush mulberry is due to the ringing of woody branches of high-yielding regionalized mulberry varieties.

Accordingly, we can grow quality seedlings by transplanting mulberry seedlings propagated by cuttings from seed (sexual) seedlings a month or 40 days later than standard mulberry seedling cultivation.

Implemented in a timely manner to ensure the thickening of the body will allow the seedlings to grow to a height of 120cm in diameter of the base.

The productivity of mulberry seedlings transplanted to a permanent place for the leaf depends on the health, quality, quantity of cuttings, mulberry variety, agronomic techniques of care, germination, methods of formation, duration of cultivation in the plantation.

When we left the non-standard seedlings in the plantation in the second year, the development of seedlings reached the height of the body thickness of 120 cm was 30-40 mm and the height of the two-stemmed branches were 180-200 mm. In this direction scientific researches were carried out in Khazarasp district of Khorezm region in the open field by laying cuttings made of annual and biennial shoots of leafless native mulberry saplings (mulberry) and planting at a

slope of 45°C. SANIISH-5, Kokuso-70, Kinriu, Uzbekistan, Pioneer, October, Winter-1, Pioneer, Tajikistan seedless, were carried out in Jararik varieties.

Scientific and practical researches were used by the methods of K. Rakhmonberdiyev [1] (1960), Sh.A. Muhammadjonova [2] (1969), A.S.Didichenko [3] (1972), U.Abdullaev [4] (1989), U.Kuchkarov [5] (2002) on cultivation of productive seedlings and the organization of bushy mulberries through the formation of independent roots of cuttings.

4. Results and Discussion

In general, it is recommended strictly to terms and forming methods of nutritious mulberry seedlings that propagated from woody cuttings with their own roots.

Consequently, in order to form an intensive mulberry bush with high nutritional value and yield, mulberry seedlings that retain the hereditary parental characteristics that emerge from the cuttings are cut by the roots and planted in new mulberry plantation.

In this case, according to the methodology specified in the experimental program, a scheme of 0.5 × 4 m is selected for the creation of the bush mulberry.

After that, depending on how many seedlings were planted per hectare, the soil was dug in a 40 × 40 cm scheme in the plowed field.

Damaged fibrous, secondary roots and primary or tap roots of the seedlings are cut with garden shears.

It is also soaked in fungicides to prevent fungal infections and planted deep down to the root canal.

If a special nutrient bush is planted to form a mulberry, the seedling body (branch) is cut by leaving 2 - 3 buds and placed in the designated place, depending on the method of planting.

Table 1: The amount of branches grown and cuttings which selected to create bushy mulberry groves

| № | Number of shoots in the bush mulberry | Shoots growth, cm | Diameter of the shoot base, cm | Average length of the ringed shoot, cm | Used part of the shoot (length) % | Ring on a single shoot, a piece % | Ringed cuttings | |
|---|---------------------------------------|-------------------|--------------------------------|--|-----------------------------------|-----------------------------------|-----------------|--------|
| | | | | | | | 1 linear meter | 1 ha |
| 1 | 3 | 258,4 | 2,12 | 191,2 | 74,0 | 4,8 | 28,8 | 72000 |
| 2 | 4 | 242,8 | 2,10 | 186,9 | 73,1 | 4,5 | 36,0 | 90000 |
| 3 | 5 | 233,4 | 1,98 | 164,3 | 70,0 | 4,0 | 40,1 | 140000 |

According to this table, the activity and health of woody cuttings are great importance in their rooting process and subsequent development, and the formation of native mulberry trees produce the same annual branches, the thickness of which is equal to the length of cuttings, leaving 4-5 branches from each bush.

Experimental work on the branch revealed the importance of studying the procedure, methods and timing of the formation of mulberry seedlings from rooted cuttings. In this case, if the

new shoots sprouted from the cuttings on the ground surface have grown to a point, all are left.

If a new branch sprouts 3-4 times from the cuttings, the strongest of them are left to form the most developed body and the rest are removed.

Thus, the earlier to be started growing the seedling vertically, the weak seedlings in the soil are not allowed to absorb nutrients and attention is paid to the good growth of the rest seedlings.

Forming of seedlings has been carried out from June 1 to June 10, (in the territory North Khorezm region) annual side branches are cut off in order to thicken the seedlings. As a result of the formation method used to thicken the seedling

body, it can be seen from the data in the table below that the main nutrients are used to thicken the seedling body, not the side branches.

Table 2: The results of the procedure and method of formation to thicken the seedling body (2017 year)

| № | Mulberry varieties or hybrids | Sowing time | Growing the seedling vertically | Thickening the body | Form a seedling branch and cut | Cut into ring, leaving 3 branches |
|---|---|-------------|---------------------------------|---------------------|--------------------------------|-----------------------------------|
| 1 | Uzbekistan | 10.04 | 1.06-5.06 | 30.06-10.07 | 25-30 VII 15-20 VIII | 1-10 IX |
| 2 | Pioneer | 10.04 | 1.06-5.06 | 30.06-10.07 | 20-25 VII 15-20 VIII | 1-10 IX |
| 3 | Pobeda x Pioneer | 10.04 | 1.06-5.06 | 30.06-10.07 | 25-30 VII 15-20 VIII | 1-10 IX |
| 4 | Tajikistan seedless mulberry (comparator) | 10.04 | 1.06-5.06 | 30.06-10.07 | 25-30 VII 15-20 VIII | 1-10 IX |

Based on the analysis of the data presented in table 2, it is possible to analyze that the organization of seedlings in the formation of intensive- looking bush mulberries and increase

high leaf yield and nutrition leads to thickening of fruiting body branches (fist) that give quality mulberry leaves.

Table 3: Growth rate and detection indicators of bush mulberries planted in the optimal scheme (2018 year)

| № | Name of mulberry varieties | Number of twigs sprouting from cuttings, pcs | The length of the branch | | The thickness of the base of the rodsee | Pd |
|---|-------------------------------------|--|--------------------------|----------|---|-------|
| | | | average cm | The summ | | |
| 1 | Uzbekistan | 3 | 271 | 9,14 | 1,7±0,04 | 0,991 |
| 2 | Pioneer | 3 | 238 | 8,13 | 1,6±0,04 | 0,986 |
| 3 | Kinriu | 3 | 233 | 7,10 | 1,4±0,04 | 0,994 |
| 4 | Pobeda × Pioneer | 4 | 229 | 7,14 | 1,5±0,04 | 0,989 |
| 5 | Tajikistan is seedless (comparator) | 1 | 219 | 4,4 | 0,5±0,04 | - |

Mulberry hybrids or mulberry cuttings are planted, in plants with their own roots, depending on the cuttings, 3 or more branches are formed from each cuttings.

Indeed, the nutritional quality and nutritional value of grown mulberry leaves is determined by the degree to which it is eaten and digested by the silkworm, as well as the amount of silk mass produced.

5. Conclusion

In recent years, the development of growing nutritious mulberry varieties and hybrids, which is its main food in the field of silkworm breeding has been accelerated, especially it is required to achieve a specific goal for planting seedlings which are resistant to environmental factors at the expense of planned seasonal periods.

Consequently, the area of intensive mulberry seedlings per hectare is significantly expanding from year to year.

As a proof of this, in the condition of Khorezm region it is important to increase the number of intensive special and bush mulberries and to strengthen the food base of silkworms in the schemes recommended for the production of regionalized mulberry varieties with high yields and nutritious leaf properties by ringing.

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