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# TECHNOLOGY OF GROWING IN NEW TYPE INNOVATIVE GREENHOUSE OF MULBERRY AUGMENTATION FROM LEAF CUTTINGS

Xudayberdiyeva Umida Saidrasulovna
D.p.a.s. (PhD), Docent of the Department of Sericulture and Mulberry Industry,
Tashkent State Agrarian University (Tashkent, Uzbekistan)

Suvonova Anzura Do'sqorayevna
Assistant of the Department of Sericulture and Mulberry Industry,
Tashkent State Agrarian University (Tashkent, Uzbekistan)

## ABSTRACT

In the article, the role of cocooning in the national economy of the republic, in which the role of mulberry, which is considered its only food base, especially increasing the share of fertile mulberry, for this, new innovative technologies for rapid reproduction of fertile mulberry, including planting and growing with leafy cuttings of fertile mulberry in different options, i.e. in river sand, sand + It is said that it was tested on humus, sand-wood shavings, sand-rice bran, the nutritional value of the leaves of such seedlings and the amount of useful substances for the mulberry silkworm are high, and as a result, it is possible to get an abundant and high-quality harvest from the cocoons.

**Keywords:** Mulberry cutting, soil, sand, greenhouse, manure, technology, food, mulberry leaf, enzyme, factors, cocoon, quality, worm, laboratory, polythene film, seed, seedling, root.

## INTRODUCTION

The development of agriculture in our republic requires close cooperation with foreign countries, effective use of advanced scientific and technical achievements in the process of global agricultural integration, and wide introduction of foreign technologies.

The mulberry tree is a very ancient perennial tree, and its leaves are mainly used to feed silkworms and produce cocoons. Cocoon is the main raw material for the silk industry.

In order to strengthen the food base of silkworms in our republic, meet the needs of farms engaged in raising silkworms, new varieties of mulberry with high productivity and at the same time the nutritional level of the leaves, reduce the volume of their import, and further develop the silk industry. systematic measures are being implemented.

In this regard, the adoption of relevant decrees, decisions and orders of the President and the Government serves as an impetus for strengthening the food base of silkworms and further development of the silk industry.

In accordance with these decisions, special attention is paid to the gradual expansion of the main feed base of cocooning, i.e., the areas of mulberry plantations, the re-establishment of mulberry varieties suitable for the climatic conditions of our country, and the increase in the volume and quality indicators of the production of fertile seedlings.

The mulberry leaf contains sugar, protein, fat, water, enzymes and various vitamins that are most necessary for the survival and development of the silkworm, and its leaf is the only food for the mulberry silkworm.

The silkworm gets all the substances it needs for its life processes only from mulberry leaves. In order to breed productive mulberry trees, any silk agronomist needs to know the structure of mulberry tree organs, mulberry's response to external environmental factors, agrotechnical rules of breeding methods, and methods of feeding silkworms with mulberry leaves.

Therefore, it is advisable to use methods that are much cheaper in terms of agrotechnical to reproduce the productive mulberry tree.

In order to increase the quality and yield of cocoons, increasing the number of high-quality mulberry seedlings grown in our country every year should be one of the main issues.

Along with scientists from foreign countries, scientists from the cocoon-growing regions of the Commonwealth of Nations have also carried out scientific work on the propagation of mulberry from leaf cuttings.

In the experiments, it is necessary to plant, grow, and prepare the soil mixture for planting the cuttings, determine the amount, choose plastic cups and determine its size. Also, in the selection and organization of special greenhouses, the criteria for the organization of the strip layer for planting cuttings were used, and the obtained numbers were processed by the methods of biological statistics.

The following conclusions can be drawn based on the results of the scientific-research works carried out in 2020-2021.

During the experiments, in laboratory conditions, special cells were prepared, wrapped with polyethylene film and doors were made for air circulation and ventilation. Our chosen method is completely new in the field of mulberry production in the conditions of Uzbekistan. Leaf cuttings of Jarariq 7, Jarariq 2, Jarariq 14 and Pioneer mulberry varieties were used for the experiment.

Unlike soil, artificial special layers are distinguished by the fact that they are a certain secondary product of human production activities on the processing of agricultural raw materials or natural resources. In the production of seedlings, they must meet the following basic requirements: they must be firm, have sufficient porosity, provide good aeration, have a high level of water retention, contain enough nutrients, must be free from fungal and bacterial infections and weed seeds. Currently, in the practice of fruit growing, the following different substrates are used for rooting green 7 cuttings of plants: sand, peat, wood shavings, perlite, expanded clay, etc.

In our experiments, the following artificial special layers, which are cheap and easily available in the republic's regions, were used: humus, large-grained river sand, wood shavings and rice bran.

The moisture capacity in the conditions of artificial special layers is as follows. The highest moisture content – 450% was observed in wood shavings. The moisture content of rice bran and humus was almost twice less than that - 160-170%, and this indicator was 30% in river sand. The use of sand in a volume combination of 1:2 and 1:3 with other substrates with high moisture capacity showed that it can be successfully used due to positive changes in water-physical properties.

Rooting of cuttings of artificial special layers began to be observed almost at the same time, that is, after 20-22 days after transplanting them to the place established from artificial special layers. Root system formation was most rapid in cuttings transplanted to artificial conditions

consisting of a mixture of rice bran and humus 1:3, wood shavings and humus 1:2, and sand and humus 1:3 (Table 1).

Table 1. **The effect of the type of artificial special layers applied on rooting and root system development of mulberry leaf cuttings**

| Specially organized layer composition | Rootability of cuttings, % | Branching pattern of the root | First order roots | | Volume of the root system, cm3 |
|---|---|---|---|---|---|
| | | | quantity, pcs | length, cm | |
| **Jararik type 2** | | | | | |
| River sand – control | 69,3 ± 6,21 | 2,8 | 15,8 | 289,7 | 8,5 |
| Sand + fertilizer, 1:3 | 85,0 ± 2,72 | 3,5 | 24,3 | 392,2 | 14,8 |
| Sand + wood shavings, 1:2 | 80,8 ± 3,36 | 3,4 | 23,5 | 364,4 | 14,4 |
| Sand + rice bran, 1:3 | 79,2 ± 3,9 | 3,2 | 21,2 | 333,8 | 14,1 |
| **Jararik type 7** | | | | | |
| River sand – control | 71,2 ± 6,05 | 2,8 | 16,0 | 273,7 | 8,5 |
| Sand + fertilizer, 1:3 | 86,0 ± 2,51 | 3,5 | 24,5 | 381,2 | 14,8 |
| Sand + wood shavings, 1:2 | 81,2 ± 3,16 | 3,9 | 23,7 | 363,4 | 14,3 |
| Sand + rice bran, 1:3 | 79,8 ± 3,6 | 3,3 | 20,4 | 331,8 | 13,7 |
| **SANIISH type 43** | | | | | |
| River sand – control | 70,7 ± 6,02 | 2,7 | 15,2 | 271,5 | 7,9 |
| Sand + fertilizer, 1:3 | 85,0 ± 2,72 | 3,8 | 23,3 | 387,2 | 13,7 |
| Sand + wood shavings, 1:2 | 80,8 ± 3,36 | 3,0 | 21,8 | 361,4 | 14,1 |
| Sand + rice bran, 1:3 | 79,2 ± 3,9 | 3,6 | 20,1 | 330,8 | 13,3 |
| **Pioneer type** | | | | | |
| River sand – control | 78,3 ± 6,21 | 2,6 | 15,8 | 270,7 | 7,5 |
| Sand + fertilizer, 1:3 | 84,2 ± 2,68 | 3,5 | 22,3 | 391,2 | 13,5 |
| Sand + wood shavings, 1:2 | 81,0 ± 3,36 | 3,2 | 20,5 | 362,2 | 14,0 |
| Sand + rice bran, 1:3 | 79,9 ± 3,7 | 2,9 | 19,2 | 328,8 | 13,1 |

As can be seen from the data presented in the table, the rooting of the cuttings in the experiment was the highest result of 85.0% in Jarariq-2 variety Sand+humus, while in the control option this indicator was 69.3%, in Jarariq-7 variety Sand+humus option was 86. 0% was 71.2% in the control option, and we can see that the sand+humus option showed its superiority in the next two returns.

Accordingly, it can be observed that Sanish 43 variety and Pioner variety decreased in the control option and increased in the sand+humus option.

The development of the surface part of the seedlings of all the above varieties was correlated with the general development of the root system. The highest growth of seedlings (120.7 and 95.7 cm) and good branching were recorded in cuttings planted in specially arranged layers consisting of a mixture of humus with sand and wood shavings in a ratio of 1:3 and 1:2.

In conclusion, mulberry leaf cuttings from the time of planting on artificial substrate develop in conditions of average monthly air temperature from 24.9 to 25.8 °C, which is 5.6-7.5 °C higher than open ground conditions, and seedlings in such conditions during a period of three months, it will be possible to get an active temperature of 151-264 °C more than in the open ground.

The content of the main nutrients in the applied artificial layers was 6.6-10%, which is 18-20 times less than the biological consumption needs of plants. Therefore, when propagating from leafy cuttings, it is recommended to feed the cuttings after they have fully rooted.

The concentration of sand with other moisture-retaining substrates in the ratio of 1:2 and 1:3 helps to improve the water-physical and nutritional properties of the substrates and makes it possible to use them for growing planting material.

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