

Study of the Effect of the Polymer Preparation of Quicksets in Fergana Province

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Abstract: The main problem in vegetatively propagated plants is the formation of callus. Therefore, in our experiments, we tried to use a preparation that accelerates the formation of callus in mulberry quicksets. The preparation "ADENIN" with its polysaccharides and biologically active substances accelerates the encapsulation and, as a result, the protection of the quicksets from the external environment, as well as the decay of the quicksets.

Keywords: Mulberry varieties, biologically active polymeric preparation "ADENIN", water extract, tumor, callus (packaging), shoot, exchange of additional root substances, photosynthetic processes.

Introduction

In order to develop sericulture in our country, the attention of the President is increasing in the development of sericulture, increasing the yield of mulberry leaves, which is the only food for silkworms, creating new mulberry plantations, renewing old ones, introducing intensive mulberry plantations, etc. In particular, President of the Republic of Uzbekistan Shavkat Mirziyoyev dated March 29, 2017 on measures to organize the activities of the "Uzbekipaksanoat" association" PR No. 2856, PR No. 3472 dated January 12, 2018 "Further development of the cocoon industry in the Republic in 2018 PQ No. 4047 dated March 20, No. 3616 "On additional measures to further develop the sericulture industry in the Republic", No. 3910 dated August 20, 2018, "On measures for more effective use of existing opportunities in the Republic's sericulture industry". Resolution No. 616 of the Cabinet of Ministers of the Republic of Uzbekistan dated August 11, 2017, dated December 4, 2018, "On measures for comprehensive development of the silk industry in 2017-2021" is evidence of the great attention paid to the work in this regard. Since 2018, he has fed silkworms three times and produced 18,000 tons of cocoons.

Results And Discussion

The root is an active organ of the plant, participating in the formation of organic substances from mineral substances in the soil. In terms of formation, mulberry roots are divided into main root and additional root. The primary root formed when propagated from mulberry seeds is called a main root, and the root formed when propagated from a mulberry quickset is called an additional root. In the rooting process, the location of the quicksets, their physiological state and the age of the tissue are important. When quicksets are made from young trees, they take root better. The rooting of quicksets taken from different parts of the branches depends on the degree of lignification of these branches. 20 days after planting the quicksets, it is considered a good condition when the sprouts begin to sprout. In the cut lower part of the quicksets, a package (callus) is formed in 10-15 days. The formation of the package has a positive effect on the good healing of the quickset area and the activity of meristem cells.

On March 30, 2021, 50 pieces of seedless quicksets of Kukoso 70, Uzbekskiy, Pionerskiy, Oktyabrskiy, Tajikistan seedless varieties of mulberry Kukoso 70, Uzbekskiy, Pionerskiy, Oktyabrskiy, Tajikistan seedless, treated with biologically active polymer preparation were planted in the field of the Zarqaynar future farm of "Beshariq Agro-pilla" LLC (limited liability company), Beshariq district, Fergana region with the release of the first thin roots, yellow growths were formed on the surface of the quicksets (Figure 1). These growths gradually spread throughout the quickset and turn from brown to bright red.



Figure 1. The formation of yellow growths on the surface of quicksets (14.04.2021)

The average rooting process of the quicksets was observed after 40-50 days depending on the variety (Table 1) and the sprouts developed from the embryonic roots appeared on the surface of the ground.

Table 1

Rooting of quicksets treated with biologically active polymer preparation (May 12, 2021)

| Name of mulberry varieties | Sown quicksets, pieces | Rooted quicksets, pieces | Rooting, % |
|--|------------------------|--------------------------|------------|
| Kukoso 70 | 50 | 40±1,02 | 80 |
| Uzbekskiy | 50 | 38±0,97 | 76 |
| Pionerskiy | 50 | 31±0,79 | 62 |
| Oktyabrskiy | 50 | 32±0,81 | 64 |
| Tajikistan seedless mulberry (comparative) | 50 | 25±0,63 | 50 |

In our experiment, 50 quicksets of each mulberry variety were planted, and their rooting indicators were that 40 quicksets took root in Kukoso 70 variety and this was 80%, 38 pieces in Uzbekskiy variety, 76%, 31 pieces in Pionerskiy variety, 62%, 32 pieces in Oktyabrskiy variety 64 percent, and as a comparative variety, Tajik seedless variety made 25 pieces, 50%, it is shown in the table. Among the researched mulberry varieties, high values were observed in Kukoso 70 and Uzbekskiy varieties.

In the conditions of Uzbekistan, mulberry trees continue to grow even in September. Initially, mulberry seedlings grown from quicksets lagged behind in growth compared to seedlings grown from seeds. Then, in the second half of the growing season, the growth accelerated due to the strong development of the root system, and at the end of the growing season, the development indicators of seedlings grown from quicksets were high.

The root of mulberry branches more and faster than its branches. In autumn, the growth of the above-ground part of mulberry stops earlier than the root, that is, even after harvesting, the growth of the root continues until late autumn. And the root starts to grow first in the stem. The development, external and internal structure of the mulberry root is directly related to its function. Mulberry roots are divided into main, medium and growing roots. Major and intermediate roots include primary and lateral roots up to the third and fourth orders. They spread around and reach the deep layers of the soil. These form the basis of plant root structure and are from 30 cm to several meters long and several cm thick. The main and lateral roots have growing and taproots, which are relatively thin and short (from 3 mm to several cm). Taproots branch strongly and form very small and thin tubers

Table 2

The formation of the root system during the growth period of mulberry quicksets, (11/22/2021)

| Name of mulberry varieties | Thickness of the base of the trunk, mm | Deep penetration of the root, cm | Spreading width of around the roots, cm |
|--|--|----------------------------------|---|
| Kukoso 70 | 21,0 | 120,0 | 100,5 |
| Uzbekskiy | 20,0 | 115,3 | 96,8 |
| Pionerskiy | 17,5 | 108,8 | 82,6 |
| Oktyabrskiy | 18,0 | 110,0 | 75,4 |
| Tajikistan seedless mulberry (comparative) | 17,0 | 100,2 | 68,3 |

Mulberry roots are highly mobile, meaning they grow in the direction of the soil conditions most suitable for them. Therefore, the formation and location of the root depends on the characteristics of the soil, the depth of the seepage water, agrotechnics and the type of mulberry.

As can be seen from Table 2, in our experiment, when we analyzed the results of the development of the root system of quicksets planted with biologically active polymer preparation, high indicators were noted in Kukoso 70 and Uzbekskiy varieties. The base of the trunk of the Kukoso 70 variety is 2.1 cm, the length of the deep penetration of the root is 120.0 cm, and the width of the spread of the roots is 100.5 cm. In the case of the Uzbekskiy variety, these indicators were 2.0 cm at the base of the trunk, 115.3 cm of root penetration, and the spreading width around was 96.8 cm. In our comparative variety, we can see that the base of the trunk is 1.7 cm, the root penetration is 100.2 cm, and the spreading width is 68.3 cm.

Conclusion

When quicksets are made from young trees, they take root better. Rooting of quickset taken from different parts of the branches depends on the degree of lignification of these branches. 20 days after planting the quickset, it is considered a good condition when the sprouts begin to sprout. Mulberry sprouts are highly mobile, meaning they grow in the direction of the soil conditions most suitable for them. Therefore, it depends on the depth of the root, agro-technics and the type of mulberry. The mulberry root branches more and faster than its branches. In autumn, the growth of the above-ground part of mulberry stops earlier than the root, that is, even after harvesting, the growth of the root continues until late autumn.

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