

REGENERATIVE CAPACITY OF BLACKBERRY CUTTINGS

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Blackberries belong to the crops that are easily propagated vegetatively. Classical methods of vegetative propagation of blackberries such as: propagation by root sprouts, arcuate layers, division of the bush (particulation), the tops of drooping shoots (pulpulation) have certain limitations in use. The propagation by dividing the bush or layering requires specialized queen cells, and therefore large areas where it is difficult to control weeds and shelter for the winter. Propagated by blackberries top is convenient for creeping varieties (eg Columbia, Caracha Black, Texas). Upright varieties (Polar, Ruben, Kiev) are difficult to root at the top, because during bending the shoot often breaks [1].

Due to the fact that only annual shoots that ripen at the end of the growing season are suitable for rooting, the length of the growing season is not enough to grow such seedlings. Blackberry plants in the Right-Bank Forest-Steppe of Ukraine often freeze in winter. It is the immature tops of the shoots that are most damaged.

According to the classic propagation technology, the tops of the shoots are bent to the ground and dug. In autumn, the rooted tops are separated from the mother plants and transplanted to a permanent place. This method is suitable for rooting in the spring, as young seedlings do not have time to mature and transplanted for the winter often freeze and die [2].

The aim of the research was to assess the regenerative capacity of cuttings from different parts of the blackberry stem and to improve the technology of root propagation. The influence of grafting time, metamerism of cuttings on the rhizogenesis ability of cuttings of the studied varieties was studied. The source material for grafting were 2-3-year-old plants varieties Smutstem, Black Satin, Ruben, Triple Crown, Thornfree.

Natural and climatic conditions of the Right-Bank Forest-Steppe of Ukraine contribute to the cultivation of the studied varieties of garden blackberries, which are characterized by high vegetative productivity. During the growing season, the plants have time to complete and complete all their inherent phases of development and prepare for the transition to dormancy.

At the end of the growing season, woody cuttings were selected from the basal, middle and apical parts of the annual shoot. In October, cuttings were planted upwards on the prepared area of the nursery. With the onset of low temperatures, the nursery was covered.

The root system is able to function at a soil temperature plus 2 0C, i.e. during the winter the plants are relatively dormant. The growth and development of root hairs slows down, but does not stop with the onset of positive temperatures in the spring, the growth and development of the root system and the development of buds above ground level is activated [3].

During the period of favorable autumn temperatures - from the beginning of October (planting of cuttings) to freezing of the soil surface (December) the planted cuttings underwent a process of etiolation and rhizogenesis began. Thus, in Ruben and Smutstem varieties, the formation of filamentous roots was observed on 80% of cuttings selected from apical shoots. In the variety Triple Crown, the formation of rudimentary roots was observed in 56% of cuttings, in the varieties Black Satin, Thornfree - 60%.

Cuttings selected from the medial and basal part of the annual shoot had a significantly lower percentage of rooting in the autumn - 11-35%.

In the spring, during the planting of blackberry seedlings for industrial cultivation, which occurs in the first decade of May, the rooted cuttings reach the state of a fully formed seedling. The total length of the root system and the number of roots were measured in the studied cuttings. Cuttings from the apical part of the shoot in varieties Ruben and Smutstem formed 6-8 roots with a total length of 60-85 cm in the variety Triple Crown formed 3-4 roots with a total length of 22-30 cm, in varieties Black Satin and Thornfree - 5-6 roots 38-60 cm long.

In plants for which the medial and basal part of the shoot was selected, the number of roots at the beginning of May was in the varieties Ruben and Smutstem - 4-5 pieces, the total length of the newly formed root system reached 40 cm, in the variety Triple Crown - respectively 2-3 pieces and 27 cm, varieties Black Satin and Thornfree - 4-5 pieces with a total length of up to 40 cm.

The aboveground part of blackberry seedlings in all studied varieties reached a height of 8-12 cm and had 3-4 well-developed leaves.

Studies have shown that using autumn-winter rooting of blackberry cuttings, provided the site is covered, the rooting of woody cuttings. At the time of planting in a permanent place of cultivation, the seedlings form a fully developed root system and aboveground part. The advantage of this method is to reduce the growing time of blackberry seedlings, using an unproductive winter period for rooting. Such seedlings do not need to be adapted to the soil and climatic conditions of the growing area.

References

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