DEVELOPMENT OF APPLE TREES, BENCH-GRAFTED ACCORDING TO THE METHOD OF CROWN FORMATION IN THE FRUIT NURSERY

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SUMMARY

To obtain a high yield production in the first year after apple tree plantation establishments and a quicker reimbursement of the considerable capital investments, it is done only in case of using grafted fruit trees on dwarf rootstock with formed crown base in the fruit nursery.

The aim of the investigations made is to improve the up-to-date technology in the apple crowned planting material productivity, produced by the method of bench grafting in perfected copulation with detached branches.

The investigations were leaded at “Codru-ST” Ltd., where it was established a fruit-growing nursery called “Fruit Nurseries” Ltd. The objects for study served the varieties Golden Delicious Reinders, Jonagored and Idared, grafted on the M 9 rootstock. For grafting were used the marcottes with the diameter of 10 mm and virus free grafted branches imported from Holland.

The bench grafting was made in February, and the graft’s place was tied with a special film, and then paraffined. The obtained grafts had been stratified in refrigerator at a temperature of +4°C. The plantation in the field was realized in the second part of April. The distance of plantation is 90x35 cm. In the second field of the fruit nursery, in spring, the annual grafting stem is shortened at 75 cm from the graft’s place.

There were studied three methods in order to have the crown base formed. These methods are: V1 – traditional method (with 3-4 branches on the base); V2 – traditional method + periodical apical leaf remove at the main axle, 4 times at an interval of 5-7 days without hurting the final bud-fruit; V3 – traditional method + application of physiological active substances to stimulate the sylleptic shoots growth on the axle. As a physiological active substance was used the preparation Ecostim with a concentration of 0,25 mg to 1 liter of water.

At the end of the first period of vegetation in the first field of the fruit nursery, the investigations demonstrated that the graft height, depending on the variety, was 114 cm (Idared), and 122 cm (Jonagored); the diameter at 10 cm above the graft’s place is of 10,1-10.9 mm.

In the second field at the end of the second period of vegetation, depending on the crown formation and the variety under the study, the tree height was between the limits of 164,7 cm and 201,7 cm. The trunk diameter was 16,2-17,0 mm, the branches average length from the crown base was 54,6-88,8 cm, the leaf surface of one tree was 0,43-0,69 m²/tree.

As a conclusion, to produce apple trees with formed crown base from the fruit nursery after the traditional method, the trees must be formed by cutting the graft in spring at 75 cm with crown base formation from normal buds (of the previous vegetation) of 4 well-developed branches with a length not less than 60 cm and more on the axis shoot and 2-3 branches obtained from sylleptic shoots, by periodical apical leaves remove at the axis shoot 4 times at an interval of 5-7 days.