

Application Of "Uzchitan" Preparation As The Growth Of Citrus Plant Regulator

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Abstract: UZCHITAN is used for the treatment cuttings of citrus cultures. It is established that the process of rooting of cuttings in a closed ground is accelerated after treatment with preparation. For the purpose of obtaining a quality planting stock of lemon, mandarin and orange cuttings should be processed for 5 minutes.

Index Terms: citrus, culture, lemon, orange, mandarin, UZCHITAN, encapsulation.

1. INTRODUCTION

Quite natural is the great interest of science and industry in the search and use of polymers of natural origin, since they have a number of interesting properties: high biological activity, in particular, anticoagulant, anti-sclerotic and antiviral effects, as well as an increased ability to specifically bind low-density lipoproteins from the blood. They are also compatible with human, animal and plant tissues, do not pollute the environment, since they are completely destroyed by microorganism enzymes, and can be widely used in environmental protection measures [1]. The products of chemical modification of chitosan, since they are, as a rule, the result of incomplete reactions and therefore contain structural elements of both the original and the modified polymer, allow us to identify features in the principles and approaches to the implementation of reactions in polysaccharide chains. Derivatives of chitosan, with a wide spectrum of action, have been successfully used to accelerate the recovery of living tissues, have films, fiber and complexing ability [2]. The increased interest in natural polysaccharides is due to the fact that upon the introduction of hydrophilic residues, covalently attaching them to the reactive groups of chitosan, derivatives are formed that are readily soluble in a wide range of pH values and in water [1,2].

2 EXPERIMENTATION

Propagation by cuttings

As the experimental results suggest, propagation by cuttings of the best varieties of citrus plants is the most effective method. A subtropical seedling grown from a shank develops normally if it fully preserves maternal heredity [3]. Such a seedling, transplanted to the intended place, begins to bear fruit in the second or third year and then annually will produce abundant crops. Propagation of citrus cuttings - in general, the method is not so difficult. It allows you to get standard

seedlings during the year [4]. According to experiments, if the air temperature in the greenhouse is kept at the same level, the harvesting of cuttings of subtropical plants can be carried out from February to September. But the most acceptable period is from the second half of February to the beginning of March. For cuttings, one should take twigs from healthy trunks of a fruiting tree, and rapidly growing or small twigs are not suitable [3,4]. Cuttings of citrus crops were carried out according to the generally accepted methodology developed by the Russian Timiryazev Agricultural Academy. Cuttings are prepared by pruning secateurs into 8-12-centimeter branches. Then the segment is updated by cutting with a sharp grafting knife directly or slightly obliquely to its limb - below the kidney. The upper part of the handle is cut by 2-3 mm. 1, 2, 3 leaves are completely removed from the bottom. And from the upper leaves one third is removed. As long as the stem gives root, it eats from the remaining leaves, that is, the process of photosynthesis will proceed [5]. Cuttings are lowered into enameled basins and poured with clean water. For processing lemon cuttings, they tried to use the drug UZCHITAN [4,5]. In each experiment, 100 pieces were planted. cuttings, fourfold repetition (25 cuttings in each repetition). To carry out phenological observations, in addition, in each experiment, 30 pieces were planted. cuttings.

After planting cuttings of citrus crops every three days, we carried out phenological monitoring of their rooting and noted the callus formation, the beginning and mass rooting of the cuttings, and the beginning of shoot growth. In 10 plants of each repetition, the number of first-order roots, their total length and volume of all roots, the diameter of the root neck, the height of seedlings, the number and length of growth of 1 and 2 orders, the number of leaves and the area of assimilation surface were calculated. The highest rooting (91-94%) of encapsulated cuttings, dipped for 5 minutes in the UZCHITAN preparation, is observed in green lemon cuttings of the varieties "F-1 Tashkent" and "F-1 Anniversary". The average rooting rate (34.1-37.0%) is observed in the cuttings of orange varieties "Uzbekistan" and grapefruit varieties "Duncan". Relatively low rooting (22.3%) was observed in Tashkent mandarin cuttings. The rooting results were influenced by the intensity of the cuttings passing through the phases of rhizogenesis. So, callus formation in lemon cuttings occurred already on the 9-10th day, mass rooting on the 23-25th day, and shoot growth on the 20-24th day. In the cuttings of orange, grapefruit and mandarin, this process is much slower, respectively, on 12-16, 36-45 and 29-35 days. It is worth emphasizing that a team of scientists from the Institute of Chemistry and Polymer Physics of the Academy of Sciences of the Republic of Uzbekistan, led by Academician

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Sayyora Rashidova, has developed a technology for pre-sowing preparation of seeds of agricultural crops using environmentally friendly polymeric preparations exhibiting the properties of chemical plant protection products. These preparations are based on the natural polymer of chitosan (waste silk-weaving factories) obtained by chemical processing of silkworm pupae. The technology for their use is called encapsulation. The polymer disinfectant with the stimulating effect of UZCHITAN was registered by the State Chemical Commission of Ministry of Agriculture of Uzbekistan and is approved for widespread use [6]. In order to accelerate rooting of cuttings in closed ground, they should be encapsulated with UZCHITAN for 5 minutes, then planted in special nurseries with fertile soil, where in 25-28 days they will have root brushes and turn into ready-made sprouts [7]. Depending on the number of cuttings in the greenhouse or in a specially designated place, a pit is excavated with a depth of 20 cm and a width of 80 cm and enclosed with planks so that the dug ground does not fall on the side. Small pebbles are lowered into the prepared pit to a thickness of 2-5 cm, then humus is 6 cm and coarse sand is 20 cm thick. It is leveled and cuttings begin to be planted (they are dipped several times in clean water before planting) to a depth of 2 cm according to the 5x5 cm pattern. At the planting site, the air temperature should be plus 18-25 ° C, and humidity within 70-80 percent. Therefore, the place of planting of cuttings should be wrapped in plastic wrap, fasten it firmly from the bottom [3,5,7]. To accelerate the appearance of roots seven days after planting, the lower part of the planting is irrigated daily with water mixed with soil, without spraying onto leaflets. During daily irrigation, the film should be opened for ventilation, then it should be closed back, stretched out smoothly and sprayed with water evenly three times a day from above [3,4,5]. After 10-12 days' callus appears in the cuttings, and after 25-28 days - the roots. During this period, irrigation is carried out and the film is periodically opened for ventilation. When watering, water is mixed with soil. Before transplanting the finished seedlings to a permanent place, the film is left open for several days [6]. In Uzbekistan, seedlings can be harvested this way every month. In winter, of course, additional heat and light are needed. Therefore, costs are less in spring and summer. Tools for cutting cuttings should be sharp and clean. Cropped cuttings are kept in a bowl with clean water. They make a "bouquet" of 25 cuttings, bind them and keep them for 12 hours in a solution with substances that accelerate growth or 5 minutes in a UZCHITAN preparation [3,5,6]. Saplings encapsulated by UZCHITAN have many roots in the form of brushes. Developments by scientists at the Institute of Chemistry and Polymer Physics of the Academy of Sciences of the Republic of Uzbekistan are used to accelerate the root production of seedlings of lemon, orange and mandarin. Planting encapsulated cuttings, lowered for 5 minutes in the drug UZCHITAN, is today considered the latest method [7]. Propagation by similar cuttings of seedlings allows you to expand and increase the production of high-yielding varieties of citrus fruits while fully preserving their hereditary features. Such seedlings begin to bear fruit in the second or third year and annually produce abundant crops. As mentioned above, propagation of seedlings in this way is a facilitated matter, it allows you to get standard seedlings throughout the year. Details were described above, at the beginning of the sub-chapter. It is also worth adding that in order to accelerate the growth of cuttings, a 0.01 percent solution of heteroauxin was

previously used. As a result, the cuttings began to dissolve a bunch of roots within 50-60 days. At the same time, the appearance of roots is almost halved due to the use of UZCHITAN stimulants [3,6,7]. In a special room for planting cuttings, a recess is made where small pebbles 5 cm thick are laid out for drainage, then organic fertilizer is placed on 6 cm, and coarse sand is placed on top of 20 cm, into which potassium permanganate solution is added, where the cuttings are planted to a depth of 2 cm according to the 5x5 cm scheme. To maintain the same level of temperature and humidity, the planting site is hermetically wrapped in plastic wrap, which is daily doused with water three times daily from the top until the roots of the cuttings appear. To speed up this process, once a week, the cuttings are irrigated with a 50% solution of UZCHITAN mixed with water. Every day, the film is opened for ventilation for 5-10 minutes, rain irrigation is carried out and the film is closed again. After 10 days, callus begins to appear in the cuttings, and after 18-20 days, the primary roots. In 23-28 days, there will already be full-weighted roots in the stalk, which eventually turns into a seedling. Thus, it can be noted that citrus crops have a high root-forming ability in encapsulated cuttings, lowered for 5 minutes in the drug UZCHITAN. It should be noted that UZCHITAN, as a stimulant, has not yet been widely introduced into agricultural practice, and is still used in laboratory conditions in citrus farming, today it is considered the latest method [3,4,5,6,7].

4 CONCLUSION

1. The biological activity of UZCHITAN was revealed with cuttings of citrus crops encapsulated. It was shown that during the pre-sowing treatment of cuttings of citrus plants with UZCHITAN solutions, it contributed to an increase in the appearance of cuttings, in that place the root emergence period was almost doubled due to the use of UZCHITAN stimulants. The possibility of replacing the domestic drug "UZCHITAN" with a water-soluble, film-forming is shown, which will make it possible to obtain healthy seedlings in the future and increase productivity.

2. UZCHITAN 2% for citrus crops (lemon, orange, mandarin and grapefruit) for accelerating the root system in one application rate of 200 ml per 1000 cuttings as well as vegetable and melon crops as a seed dressing against root rot in one rate of 20 l / t

3. To learn the maximum quality planting material of citrus cultures of cuttings before planting, it should be processed for 5 minutes in the drug UZCHITAN,

4. The planting of encapsulated cuttings, lowered for 5 minutes in the drug UZCHITAN, today is considered the latest method.

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