

INTRODUCTION OF THE BLACKBERRY PLANT INTO CULTURE IN *IN-VITRO* CONDITIONS

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ABSTRACT

This article provides information on the process of in vitro sterilization of a blackberry plant, why a growing medium is a suitable medium for microorganisms and pathogens, the sterilization process before planting plants in a sterile environment, and what chemicals the drug produces good results when used in what percentage solution.

Keywords. Blackberry, in vitro, serilization, nutrient medium, starting material, bud, pathogen, plant, disinfection, substrate, diacidic acid, sublimate,

IN-VITRO SHAROITIDA MAYMUNJON O'SIMLIGINI KULTURAGA KIRITISH

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Annotatsiya

Ushbu maqolada *In-vitro* sharoitida maymunjon o'simligini sterillash jarayoni haqida ma'lumotlar keltirilgan bo'lib, nima sababdan oziqa muxiti mikroorganizm va potogenlar uchun mos muxit ekanligi, o'simliklarni sterill bo'lgan muxitga ekishdan oldin sterillash jarayoni va qaysi kimyoviy preparat nechchi foizli eritmada qo'llanilganda yaxshi natija berishi haqida ma'lumotlar keltirilgan.

Kalit so'zlari. Maymunjon, in-vitro, serillik, oziqa muxiti, boshlang'ich material, kurtak, patogen, o'simlik, dizenfeksiyalash, substrat, diatsit, sudema,

Аннотация

В этой статье представлена информация о процессе стерилизации обезьяньего растения в условиях in vitro, о том, почему питательная среда является подходящей средой для микроорганизмов и патогенных микроорганизмов, о процессе стерилизации перед

посадкой растений в стерильную среду и о том, какие химические вещества препарат дает хорошие результаты при использовании в каком процентном растворе.

Ключевые слова. Ежевика, in vitro, серилизация, питательная среда, исходный материал, бутон, возбудитель, растение, дезинфекция, субстрат, двухкислотная кислота, сулема,.

INTRODUCTION

Due to the simultaneous use of nutrients, excellent substrates for the development of various types of microorganisms should be saprophytic microflora, the starting material must be thoroughly sterilized. In this case, mercury-containing compounds (sulema or diacid 0.1-0.2%) or compounds containing less toxic active chlorine (chloramine 10-15%, sodium or calcium hypochlorite 5-10%) are often used.

As a result of the conducted research, as well as the scientists of the field, it became known that if the cultivation of plants is carried out during the biologically active periods of the plants, i.e. during the period of bud awakening in February-April, 'sib development is observed.

The results were different when the blackberry plant was subjected to external disinfection in vitro. Initially, when we used NaOCl 0.1% solution, when we sterilized for 10 minutes, 8 out of 40 buds died, 22 were infected with various pathogens, and the number of surviving buds was 10, which is 25%. noted, compared to the control, 37.5% showed a lower result. In the control version of NaOCl 0.1% solution, when disinfection was carried out for 15 minutes, out of 40 buds, 7 dead buds, 8 infected with various pathogens, and 25 surviving buds were 62.5%, and NaOCl was used for 20 minutes. During external sterilization in 0.1% solution, 5 dead shoots and 4 infected with various pathogens, 31 surviving shoots are 77.5%, which is 15.5% higher than the control option. the result was recorded (Table 1).

1-table Sterilization processes blackberry plant impact on survival

№	Sterilization time (minutes)	The number of shoots obtained, pcs	The number of dead shoots, pcs	The number of shoots infected with pathogens, pcs	The number of surviving shoots, pcs	Survival rate (%)
NaOCl 0,1%						
1	10	40	8	22	10	25
2	15 (naz.)	40	7	8	25	62,5
3	20	40	5	4	31	77,5
<i>EKF₀₅</i>			<i>0,09</i>	<i>0,57</i>	<i>0,65</i>	<i>1,63</i>
<i>Sx</i>			<i>1,38</i>	<i>4,03</i>	<i>2,97</i>	<i>2,97</i>
Sulema (HgCl) 0,1%						
4	10	40	21	6	13	32,5
5	15 (naz.)	40	22	9	9	22,5
6	20	40	24	2	14	35
<i>EKF₀₅</i>			<i>0,09</i>	<i>0,21</i>	<i>0,16</i>	<i>0,40</i>
<i>Sx</i>			<i>0,41</i>	<i>3,74</i>	<i>1,33</i>	<i>1,33</i>
Diatsid 0,1%						

7	10	40	19	8	13	32,5
8	15 (naz.)	40	23	3	14	35
9	20	40	27	3	10	25
<i>EKF₀₅</i>			<i>0,24</i>	<i>0,17</i>	<i>0,13</i>	<i>0,31</i>
<i>Sx</i>			<i>1,05</i>	<i>3,73</i>	<i>1,02</i>	<i>1,02</i>

When sterilization was carried out in Sulema (HgCl) 0.1% solution, the result was as follows: out of 40 buds, 21 buds died within 10 minutes, 6 buds were affected by various pathogens, and 13 buds survived. was 32.5% and showed a 10% higher result than the control variety. Sulema (HgCl) 0.1% in our control option for 15 minutes, when external disinfection was carried out for 40 buds, there were 22 dead buds, 9 buds infected with pathogens, and 9 surviving buds - 22.5% more recorded the indicator, Sulema (HgCl) 0.1% for 20 minutes when 40 shoots were sterilized, 24 shoots died, 2 shoots infected with various pathogens and 14 surviving shoots It shows a 12.5 higher result compared to the control, achieving a result of 35%.

The results were observed as follows when external sterilization was carried out in diacid 0.1% solution. The number of shoots that died during disinfection for 10 minutes was 19, the number of shoots infected with pathogens was 8 and the number of surviving shoots was 13, which was 32.5%, while in the control option for 15 minutes Out of 40 buds, the number of dead buds was 23, our buds infected with various pathogens were 3, and the number of surviving buds was 14. When sterilization was carried out for 20 minutes, the dead buds were 27, infected with various pathogens. 3 damaged shoots, 10 surviving shoots showed 25% and 10% less than the control option.



Figure 1. Uncleaned growth points (left), sterilization process of growth points (right).

The highest result of external disinfection of blackberry plant was 77.5% for 20 minutes when NaOCl 0.1% solution was used. Sulema (HgCl) 0.1% showed a high result of 32.5% for 10 minutes, while Diacid 0.1% showed a high result for 15 minutes when performing external sterilization, 35% was recorded.

To sum up, 5 dead shoots and 4 infected with various pathogens during external sterilization in NaOCl 0.1% solution for 20 minutes in a 0.01% solution of hypochlorite and for all berry crops. There were 31 shoots that survived and made up 77.5%.

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