



SELECTION AND STERILIZATION OF MEDICINAL POMEGRANATE (PUNICA GRANATUM L.) EXPLANTS

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ABSTRACT

In order to increase the volume of pomegranate fruits in the republic, it is necessary not only to expand the areas, but also to introduce new innovative technologies and scientifically based methods into the pomegranate plantation network. The development of the pomegranate fruit crop, the quality of the fruit and its yield largely depend on the quality of the planting material. Varietal purity of pomegranate orchards, especially for export, is of great importance.

However, it is worth noting that it takes a long time to grow pomegranate seedlings in the traditional way. Therefore, nowadays *in vitro* microcloning technology is one of the most promising methods of growing pomegranate seedlings and maintaining variety purity [1].

With the help of microcloning technology, in a short period of time, it is possible to increase the required amount of high-quality material, free of virus and bacterial infection, and it is possible to obtain seedlings with high purity [2, 3].

In vitro conditions apical meristems are used in plant propagation because viruses penetrate apical meristems more slowly than other parts of plants. Therefore, parts of the plant's apical and lateral buds (growth points) are used. [4].

Purpose of the study. Selection and sterilization of medicinal pomegranate (*punica granatum l.*) Explants.

Methods and techniques. Medicinal pomegranate peel (*punica granatum l. Uzbekistan, Tashkent*) as plant raw material, 70% ethyl alcohol as extractant, Murasiga Scoog was used to grow nutrient medium.

Experimental part. The process of clonal micropropagation consists of several stages, and the first stage of our research is the selection of a donor plant, separation of explants, sterilization and obtaining a well-growing sterile culture. The selected explants were brought from the available local varieties in the republic and planted in the experimental area of our center on the "Tuyatish", "Kazoqi", "Qayum" and introduced "Wonderful" varieties of pomegranate.

-woody explants (a pical and lateral shoots) from existing cultivars in the experimental field were isolated in the first half of July and brought to the laboratory in special containers. The time spent in this process was 10-15 minutes. In the laboratory, the explants were washed

with running water for 10-15 minutes with the addition of detergents (soapy water), and were cleaned of excess parts and leaves. (Figure 1).

Extracted explants were performed in aseptic conditions (in laminar boxes) using sterilized equipment. Initially, the method of sterilization of plant explants R.G. Butenko (1990) and additional chemicals were used as an experiment. [5].

Explants selected from available cultivars in the experimental field .

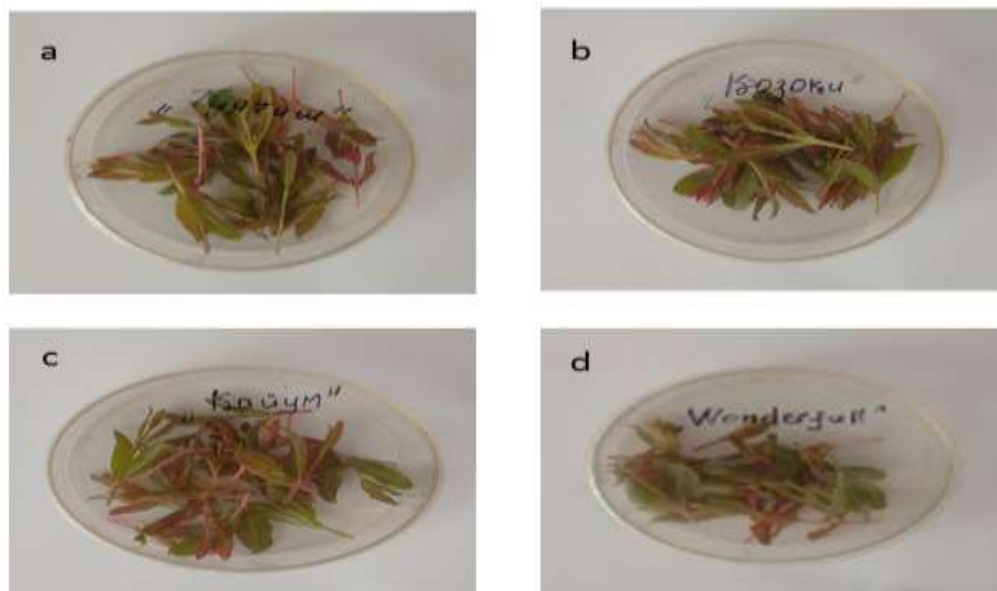


Figure 1

Figure 2

- a) "Tuyatish" variety of pomegranate
- b) "Kazakh" variety
- c) "Qayum" variety
- d) "Wonderfull" variety

Primary sterilization was performed in three ways (Table 1). After that, the sterilized explants were gradually planted in artificial nutrient medium MC (Murasiga Skug).

Results

Effectiveness of sterilization methods in tested varieties

Table-1

No	Method of sterilization of explants	The first of the planted explants number, pcs	Number of sterile explants, pcs	Sterile explants yield,%
Varieties of experience				
1.	Hydrogen peroxide 30% (H ₂ O ₂) 5 min + ethanol (S ₂ H ₅ OH) 1 min + Water (H ₂ O) 5 min	50	5	10
2.	0.1% sodium hypochlorite (Na HCl) 20 min + 96 % ethanol (S ₂ H ₅ OH) 30 sec + Water (H ₂ O) 5 min	50	15	30

3.	Fundazol 50% 10 min + ethanol(S ₂ H ₅ OH) 96% 30 sec + Sodium hypochlorite (NaHCl) 0.1% 20 min + antibiotic 1 min + Water(H ₂ O) 5 min	50	46	92
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Conclusion. Explants collected from existing cultivars in the experimental field as a result of sterilization by different methods, their effectiveness has been proven to be in different indicators. The survival rate of the explants in the period of 15 days from the day of the experiment was different. Thus, in the first and second variants of the experiment *in vitro*, the yield of sterile explants was 10-30 percent. In the third version of the experiment, the yield of sterile explants of these varieties was 92% and was considered satisfactory. Especially the use of sterilization components in combination with fungicides and antibiotics has been shown to give good results in pomegranate *in vitro culture*.

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