

CONDITIONS AND IMPORTANCE OF IN VITRO CULTIVATION OF BERBERIS INTEGERRIMA BUNGE SEEDS.

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Abstract: Growing the *Berberis integerrima bunge* plant in vitro has biotechnological and pharmaceutical significance, therefore, in this article we will discuss the in vitro growth of the black zrik plant and its results, the used nutrient media and research results. . The reason is that there are several methods of growing plant seedlings, and each of them has certain advantages and disadvantages. Growing *Berberis integerrima bunge* plant by biotechnological method and determining which one is effective is one of the tasks of scientific work. We started with invitro cultivation in the invitro laboratory located in Jomboy district of Samarkand region. The plant seeds were taken from the garden of Samarkand State University by Professor Muqimov Ilhom.

Keywords: *Berberis integerrima bunge*, invitro, nutrient medium, karaqand

Introduction: According to the decision of the President of the Republic of Uzbekistan, dated 10.04.2020 No. PQ-4670 "Measures for the protection, cultural cultivation, processing and rational use of available resources of medicinal plants growing in the wild" about" decision mentioned about this plant. In recent years, consistent reforms have been implemented in the republic regarding the protection of medicinal plants, the rational use of natural resources, the establishment of plantations for the cultivation of medicinal plants and their processing.

750 species of more than 4.3 thousand plants belonging to the local flora are considered medicinal, 112 species of them are registered for use in scientific medicine, of which 70 species are actively used in the pharmaceutical industry.

In 2019, 48 million USD worth of processed medicinal plant products were exported.

At the same time, analyzes show the need to protect medicinal plants, establish their plantations, and create an additional value chain through processing. In general, Black zirk (karaqand) is a branchy bush that is up to 4 meters tall and belongs to the zirk family. Old branches of the plant are gray, young branches are brown. Thorns are three-piece. The leaves are inverted ovate, oblong, non-passing, the edges are slightly toothed or flat, their length is 2-6 cm. The flowers are yellow in color, the flower is branched with shingles, and it is rosy. The fruit is dark purple in color and has an ellipsoid appearance.

Materials and methods were implemented in special laboratories under invitro conditions. Sterilization is the complete cleaning of various substances, surgical instruments, bandages, food products, etc. from microorganisms and viruses. One of the important methods of asepsis in medicine. Sterilization is carried out using physical and chemical methods. Physical

methods include thermal (heat) and light sterilization. Chemical sterilization is also called cold sterilization, in which synthetic materials or heat-resistant instruments are sterilized using chemicals that have a germ-killing effect.

In-vitro refers to the growing of plants in test tubes and glass containers under artificial conditions. That is, in sterile conditions, in laboratory rooms, plants are propagated in glass containers.

"Biotechnology" of the scientific-research institute of horticulture, viticulture and winemaking named after Akademik Mahmud Mirzayev under the Ministry of Agriculture of the Republic of Uzbekistan started its activity in 2015.

This laboratory is based on "Cell and tissue culture engineering", where clonal (copy) micropropagation of plant cells and tissues is carried out. The following results can be achieved by growing plants in this laboratory:

Genetically identical plants are planted and propagated;

Through clonal micropropagation, one plant is multiplied to several thousand;

It accelerates the transition of the plant from the juvenile period (from the grass or vegetative shoot) to the reproductive period;

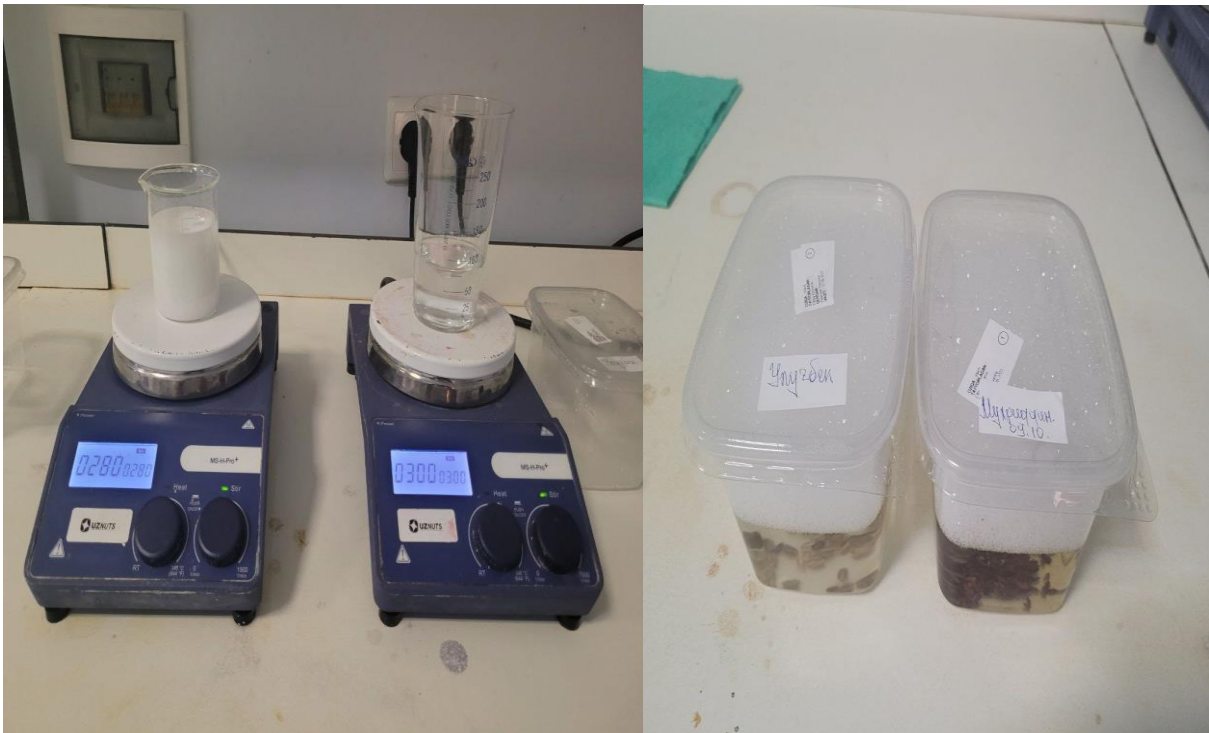
In order to accelerate the selection process, i.e., in the renewal of plant varieties and in large quantities, work is carried out;

Since it is in laboratory conditions, it is possible to breed plants in any season without choosing a season;

The multiplication factor is very high. 104-105 in herbaceous plants; it is possible to increase it up to -104 for leafy plants.

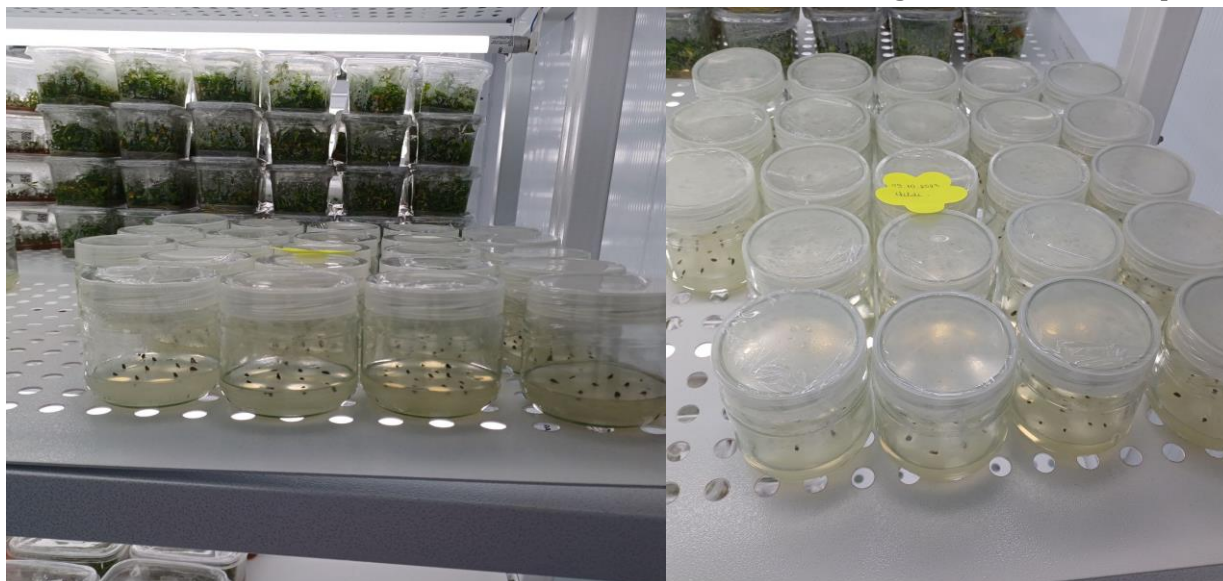
Opportunities to automate the cultivation process and reduce the area required for plant growth, etc.

It helps to restore old varieties of plants, for example, strawberries, potatoes.



1-2 pictures. measure the required nutrient medium

Results: Seeds were grown in the medium of 15 seeds per petri dish. We waited for the desired result when all conditions for their growth were provided.



3-4 pictures the growing conditions of the seeds (11.10.2023)

Discussions. The development of another optimal method of growing plants in vitro can show very effective results.

In conclusion

1. The cultivation of this plant in Invitor should be supported again in another nutrient environment.
2. Based on the obtained results, it can be said that the normal input feed could not be an optimal medium for the germination of black zrik seeds.

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