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THE ADVANTAGES OF PROPAGATING MEDICINAL PLANTS IN VITRO

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Annotation:
Modern biology's control of plant growth and development is crucial. Studying the physiological control mechanisms at the cellular level, the means of regulating physiological processes, and the regulatory mechanisms of the plant cell brings up a wide range of possibilities for the utilization of prospective opportunities. In-vitro refers to the artificial circumstances used to grow plants in test tubes and glass jars. That is, plants are propagated in glass containers under sterile circumstances in laboratory settings. This article discusses the advantages of in vitro propagation of medicinal plants.

Keywords: medicinal plants, reproduction, in vitro method, pomegranate, biotechnology, drug production, laboratory, development.

To address the issue of plant conservation and reproduction on a global scale, strategies and methodologies must be developed now. In this context, biotechnology research has emerged as a fresh, potential development path in recent years. This is a brand-new scientific field, and its main goal is to supplement current conventional approaches with cutting-edge biotechnological tools in order to preserve current biodiversity and enable the sustainable management of genetic resources. The production of stable cultures of absinthium plant is important for the industrial production of secondary metabolites, in particular artemisinin, chamazulene and essential oils. Another important aspect of this method is that the plants grown in the field are resistant to biotic and abiotic stresses, we can solve the problem through the In vitro method. The purpose of the research work is to choose the optimal conditions for in vitro reproduction of Artemisia absinthium and develop recommendations for its implementation.

Today, one of the urgent tasks of the drug production network in our country is to naturalize medicinal products and meet the need for medicinal plant raw materials. No. 4901 of the President of the Republic of Uzbekistan dated November 26, 2020 "Measures related to the expansion of the scope of scientific research on the cultivation and processing of medicinal plants and the development of their seed production" The adoption of the decision was a huge practical step towards the development of medicinal plants, especially the medicinal erman plant. 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 up 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.

Many people have been employed, a garden has been developed as an in-vitro laboratory, and more or less obvious economic consequences can be seen. But the task of study and application does not stop there. The rationale is because each objective has a separate set of tasks to complete it. Pomegranates are associated with various medicinal abilities and are seen as a symbol of domination, power, love, and loyalty in old tales. Just one example, pomegranate is rich in magnesium, calcium, potassium, phosphorus, sodium, iodine, vitamins A, B, C, and E, and serves to strengthen the body's immune system. In addition, it is of great importance in agriculture, medicine, pharmaceuticals, food industry and other production areas.

With this in mind, it can be said that one of the current urgent issues is to establish the technology for producing disease-free, "healthy" seedlings as well as the best conditions for reproduction and cloning of local pomegranate varieties in the republic in relation to their genetic characteristics.

Herbs are examples of medicinal plants, which include those utilized in the food, fragrance, and cosmetic sectors as well as for the treatment and prevention of disease in both people and animals. It has been estimated that the world's medicinal plant species number between 10,000 and 20,000. Over a thousand plant species' chemical, pharmacological, and functional characteristics have been studied. In Uzbekistan, there are more than 700 different varieties of medicinal plants. Of these, about 120 species of plants grown in natural conditions and cultivated are used in scientific and folk medicine. At present, about 40-47% of medicines used in medicine are obtained from raw plant materials.

Since ancient times, people have used medicinal herbs to treat illnesses. Works providing knowledge about medicinal plants were written 3–4000 years ago in India, China, and Ancient Egypt. Treatment using medicinal plants has origins and traditions in the East, particularly in Central Asian folk medicine. In terms of the usage of medicinal plants for health care, Abu Ali Ibn Sina's "Al-Qanun" offers details on the therapeutic qualities of about 476 plants and the procedures for using them. Now, during that time, the types of medicinal plants increased, and folk medicine was enriched with medicinal plants.

More than medicinal plants, pomegranate, bitter gourd, almond, dogwood, medicinal cauliflower, walnut, zubturum, frankincense, rosehip, amonkara, pistachio tree, sachratqi, chayot, shildirbosh, liquorice, wormwood, pocket, mint, kiikot, mountain basil, taraxacum and others are scattered. Paxicarpine from bitter gourd, psoralen from gorse, garmin from frankincense, anabazin from gorse, galantamine from gorse, spherophysin from sedum, etc. alkaloids are obtained. An anthelmintic pelterin tanate and an extract are prepared from pomegranate seeds.

Medicines manufactured from jaggery and lagochilus are used to stop bleeding, medicines made from pistachio bean and tea tree are used to cure stomach ailments, and medicinal gulkhairi concoctions are expectorants and softeners. Various medications are created in the Islambekov-named pharmaceutical facility in Tashkent using Uzbek-grown and cultivated medicinal herbs.

The technology of in-vitro microclonal pomegranate reproduction is being created for the director of the Laboratory of Transgenomics and Tissues of the Academy of Sciences of Uzbekistan and doctor of biological sciences. By doing this, mother plant gardens, the original planting materials, are organized, and high selection indicators are kept. By using the technology of microclonal reproduction, it is possible to reduce the time of cultivation of the plant at the level of the commodity standard by 3-4 months. It is possible to create several new varieties in one year, and in 2-3 years to get millions of high-quality planting material.

In conclusion, new biotechnological "healthy" pomegranate types will be grafted onto existing pomegranate orchards in the republic, and new pomegranate orchards will be planted, all within the context of scientific research. Additionally, there is no need for our nation to import seedlings. Spending on foreign currency is reduced as a result. In the Kuva district of the Fergana region, Fergana Pomegranate farming Agrofirma cultivated the "healthy" pomegranates "Kozoki", "Cain pomegranate", "Tuyatish", "Javdari", "Koradon achchik", "Dashnabod", and "It was established an in-vitro nursery with a number of types, including Koraboyev. Using this in-vitro nursery garden, old pomegranate groves across the province will be rejuvenated, restored and a continuity of high-yielding, healthy seedlings will be ensured. As a result, it is possible to grow 1000-5000 seedlings per year. This indicator increases year by year. In the first year, 3 families will be employed, and this indicator will increase with the establishment of plantations.

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