Analyzing the high interest of our customers in a wide variety of decorative succulent plants, as well as the high requirements for the quality of planting material, two years ago, the Cactus-online LTD team founded the "Cactus-online Tissue Culture" micropropagation laboratory.

Our laboratory is equipped with all the necessary materials and state-of-the-art facilities to address the broadest range of micropropagation tasks in modern industrial floriculture. However, the most crucial role is played by our team of highly qualified employees who have advanced biological education and extensive practical experience.

The laboratory's work is focused on accomplishing several key tasks:

* Finding the optimal sterilization process and aseptic culture initiation of intact plant material.
* Developing efficient methods for culturing isolated plant tissues that have decorative, commercial, or scientific research interest.
* Preserving and propagating unique cultivars and rare species through clonal micropropagation.
* Conducting breeding work in aseptic conditions.
* Selecting optimal conditions for the adaptation of regenerant plants to greenhouse conditions.

During the laboratory's operation period, our team successfully introduced into in vitro culture over 300 species, hybrids, cultivars, and forms that are of interest not only as decorative plants but also as research objects in our future projects. It is worth noting that our sterilization techniques and the selection of plant material from which we obtain explants do not harm the intact mother plants, allowing us to preserve particularly valuable collection specimens. Efficient methodologies for clonal micropropagation through direct and indirect morphogenesis have been developed and implemented. Individual cultivation conditions have also been selected for isolated tissues of especially decorative hybrids, cultivars, and rare representatives from the families: Asparagaceae Juss. (Agave L.); photo Asphodelaceae Juss. (Aloe L., Haworthia Duval, Haworthiopsis G.D.Rowley, Tulista Raf.); photo Araceae Juss. (Alocasia G.Don, Philodendron Schott., Syngonium Schott.); photo Crassulaceae J.St.-Hil. (Adromischus Lem., Echeveria DC.); photo Musaceae Juss. (Musa L.); photo Rosaceae Juss. (Potentilla alba L.).

As a result of optimally selected micropropagation and adaptation protocols for regenerant plants, considering the control of somaclonal variation, we obtain high-quality planting material. We do not stand still, and in order to obtain new unique decorative forms, we conduct breeding work "right in the jar" by successfully germinating seeds and selecting promising seedlings directly under aseptic conditions. Our goals are directed towards the future, and the efforts of the laboratory staff will be concentrated on solving the aforementioned tasks and conducting research dedicated to preserving the biological diversity of the most vulnerable representatives of flora.

In our time, the problem of conserving global plant resources ex situ, i.e., in protected greenhouse conditions, is particularly relevant. Constant anthropogenic pressure on biocenoses, climate change, and the actions of unscrupulous individuals engaged in poaching and removing plants from their natural habitats for commercial gain, lead to the depletion of natural plant resources and even the complete destruction of certain populations. At present, hundreds of plant species survive only in collections, in conditions of introduction, and are completely extinct in the wild. Miniature decorative succulent plants, which have recently gained significant interest, suffer especially. Most species are endemic, growing in harsh climatic conditions and characterized by small, fragmented ranges with sparse populations.

Thus, the accumulated theoretical and practical data will be aimed at preserving rare and endemic species under ex situ conditions with the possibility of their successful propagation through micropropagation. This will enable us to address the problem of their preservation and distribution in collections, significantly reducing the demand for wild plants and thereby reducing the anthropogenic pressure on natural populations. In the future, we intend to collaborate with botanical gardens and environmental organizations to lay the foundations for more comprehensive projects related to the restoration of vulnerable natural populations through in situ reintroduction of affected species.

By bringing you joy, we care about nature.