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Ex situ tropical orchids conservation in Ukraine

Problem of biodiversity conservation of tropical floras having the global ecological, economical and social importance, has already exceeded the boundaries of individual countries and requires the efforts of scientists to be joint on the local, national and international levels.

The measures undertook to conserve the biodiversity of tropical orchids' flora together with protection of natural populations of rare species *in situ*, should inevitably include the preservation of these plants *ex situ* under glasshouse conditions.

The National Botanical Garden's (NBG) collection of tropical orchids, having the state of National Treasure, contains about 4,500 plants covering approximately 170 genera and 450 natural species. The majority of collection (more than 70 percent) has originated from South-East Asia whereas the other 30 percent are composed of orchids from South and Central America with a few genera from Africa and Madagascar.

The main aspects of orchid investigations in the NBG comprise the next items: 1) the studying of developmental biology of orchid plants both in natural habitats (mainly in Vietnam) and under glasshouse conditions (with special reference to reproductive biology of epiphytes and lithophytes as the most vulnerable); 2) investigation of the structural adaptations of orchids to surviving under the wide range of different habitats; 3) elaboration of *in vitro* orchid propagation methods and cultivation techniques.

The application of *in vitro* seed propagation technique to rare tropical orchid species is undoubtedly a powerful tool for *ex situ* biodiversity conservation. Therefore before now many tropical native orchids species from South America (*Acacallis cyanea* Lindl., *Cattleya* spp., *Laelia* spp., *Oncidium* spp.), South-East Asia (*Coelogyne* spp., *Dendrobium* spp., *Paphiopedilum* spp.), Africa and Madagascar (*Angraecum eburneum* Bory, *A. sesquipedale* Thou.) have been propagated in the NBG through a range of asymbiotic seed germination techniques and tissue culture procedures aimed to preserve a number of individuals under artificial conditions in glasshouses of temperate zone and in such way to protect these species from extinction.

Beside this the exhibition greenhouse "Orchidarium" which was opened for public in 2005 can be considered as an effective way to form the public awareness of necessity to protect rare tropical orchid species suffering from over-collecting and continuous loss of their natural habitats. In NBG two orchid conferences on biology and conservation of tropical and native orchids have been organized (1983 and 1999 years), which reflects that NBG is the center of *ex situ* tropical orchid biodiversity conservation in Ukraine.

*NBG's collection of tropical orchids was registered in Administrative organ CITES in Ukraine (notification № 6939/19/1-10 from 23.06.2004)