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## THE BOTANICAL GARDEN OF ESZTERHÁZY KÁROLY CATHOLIC UNIVERSITY – HISTORY, PRESENT AND FUTURE.

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### **Abstract**

Botanical Garden of Eszterházy Károly Catholic University was founded in 1967. Since then, the fate of the garden and its plant collection have changed many times, from well managed garden to semi-abandoned arboretum. The recent development of the area has started in 2015, after the extensive reconstruction of the whole garden. The number of plant species has increased significantly and a seedbank was established. The variety of the environmental educational programs is offered. Although relatively young, it has achieved a stable position among the other Hungarian and European botanical gardens. Nevertheless, the garden still faces some problems that need to be solved in the near future.

**Key words:** *botanical garden, plant collection, environmental education*

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## AZ ESZTERHÁZY KÁROLY KATOLIKUS EGYETEM BOTANIKUS KERTJÉNEK TÖRTÉNETE, JELENE ÉS JÖVŐJE

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### Összefoglaló

Az Eszterházy Károly Katolikus Egyetem Botanikus Kertje 1967-ben alakult, azóta a kert és a növénygyűjtemény sorsa sokszor változott, a jól kezelt, gondozott kertből egy félig elhagyott arborétummá vált. A terület további fejlesztése 2015-ben kezdődött, a teljes kert átfogó rekonstrukciója után. Jelentősen megnőtt a növényfajok száma, és magbankot hoztunk létre. Környezetnevelési programok széles skáláját kínáljuk. Bár a kert viszonylag fiatal, stabil helyet foglal el a többi hazai és európai botanikus kert között. Ennek ellenére a kert továbbra is többféle problémával néz szembe, amelyek még megoldásra várnak.

**Kulcsszavak:** *botanikus kert, növénygyűjtemény, környezeti nevelés*

### Basic information about the garden

The botanical garden is located in an area of approximately one hectares, on the eastern edge of the city of Eger, on top of the Almagyar hill. The collection consists of approximately 150 tree and 600 herbaceous plant species, mostly dominated by the native elements of the Carpathian Basin, especially the neighboring Bükk and Mátra mountains. The botanical garden is managed by the Department of Botany and Plant Physiology. The garden currently has four employees: a director, a curator of plant collections, a gardener and a technician. Besides the botanical garden itself, there is one more hectare of an old orchard and a school garden. Part of the botanical collection is the Lajos Juhász Greenhouse and Roof Garden (Leányka University Campus) of Eszterházy Károly Catholic University, which is home to numerous subtropical and tropical plants. Since 2010, the botanical garden has been a protected nature area designated by the local municipality. The botanical garden is a member of the Hungarian Association of Arboreta and Botanical Gardens (HAABG).

## **Objectives and the mission of the botanical garden**

The botanical garden is a collection of living plants. Its most important objectives are the professional collection, propagation and preservation of plant species. Thus, the garden help to the survival of wild plants and possibly useful and ornamental plant varieties. The botanic garden is an exhibition that supports education and has an outstanding role in disseminating information. Additionally, it provides opportunities for botanical, ecological and nature conservation research. The garden has provided a pleasant environment for resting and relaxation (KRISHNAN, NOVY 2016; PÉNZESNÉ ÉS TÁBORSKÁ, 2023).

## **The history of the botanical garden**

The botanical garden was founded on the initiative of János Suba and his colleagues from the Department of Botany, on the edge of the city of Eger, in the area of former vineyards and orchards. The first purpose of the garden was to present the vegetation of the North Hungarian Mountains. After 1980 the development of the flourishing, well-kept garden has fallen back due to a lack of funds. The very serious and prolonged drought that occurred for several years also caused great damage. The garden's management was limited to basic upkeep due to the downsizing of professional staff and the absence of a gardener. In 2010 the botanical garden was declared a protected nature conservation area of local importance by the Council of Eger. Two years later, in 2012 a new greenhouse (Lajos Juhász Greenhouse and Roof Garden) was built on top of building "G", as part of the Leányka University Campus. The botanical garden was completely reconstructed in 2015: the structure of the botanical garden habitats and the network of sidewalks and paths were redesigned. An irrigation system was introduced. About 100 new herbaceous plant species and trees were planted in the garden. The botanical garden seed bank was established in 2015 and since the Index Seminum has been published regularly. Till this time, the number of plant species introduced and propagated in the garden has significantly increased thanks to the collection of seeds from natural habitats and through the seed exchange program. Every year we welcome our guests with a renewed program offer.

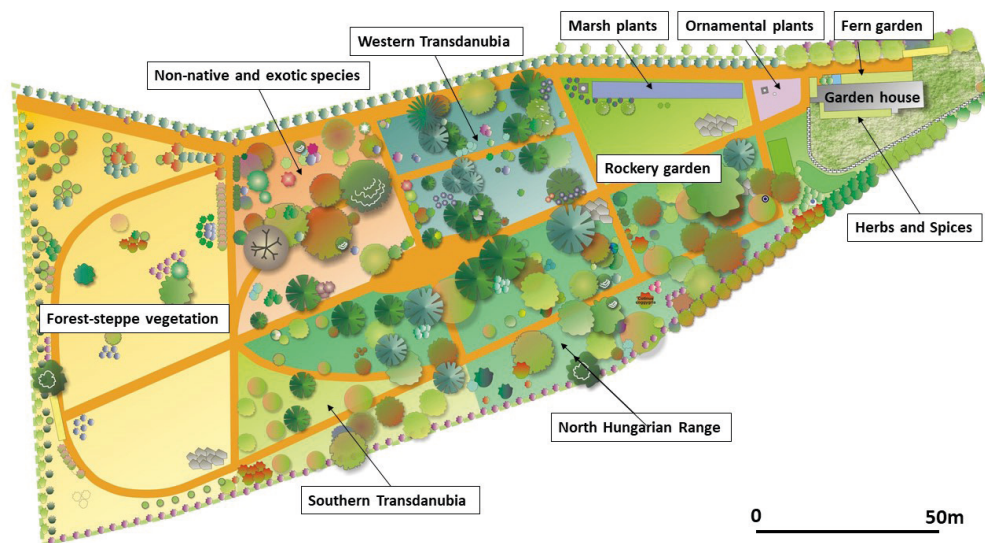


Figure 1: Map of the botanical garden – the garden habitats were designed according to the main vegetation-based landscape regions of Hungary

## Development of the garden between 2015–2023

The garden habitats were designed and the plant species were planted according to the main vegetation-based landscape regions of Hungary (MOLNÁR et al. 2018). The largest part of the grove territory was dedicated to the North Hungarian Range, smaller parts were to represent the Southern Transdanubia or Western Transdanubia. As for non-forest areas in the garden, the biggest part was designed to exhibit some types of forest-steppe habitats. Several rockeries (on limestone or rhyolite) were created during the reconstruction or in the following years (fig.1). However, this division of the garden habitats is no longer respected so strictly. The reason is that a lot of plant species from the Transdanubia region are not able to survive the dry subcontinental climatic conditions of the garden (with main annual precipitation: 543 mm and main annual temperature: 9.9 °C) (BIHARI et al. 2018).

During the reconstruction in 2015, besides the mature trees, only a very small number of original plant species could be saved. For this reason, and as a part of the reconstruction, the seeds of the 41 rare plant species were collected from the North Hungarian Range and scientific research was conducted on their germinating and growing conditions between 2011–2015 (PÉNZES-KÓNYA et al. 2015). Some of them were successfully introduced in the garden and are still in cultivation (e.g. *Allium victorialis*, *Armeria maritima* subsp. *elongata*, *Crepis panonica*, *Ferula sadleriana* or *Hieracium bupleuroides* subsp. *glaberrimum*). There are several plant species still growing in the garden, such as *Dracocephalum*

*ruyschiana*, *Poa remota* and *Cirsium erisithales*. However, these plants are unfortunately in poor health conditions. These species are usually growing in relict habitats of submontane and montane regions. It is highly likely that the poor health of these plants is due to the warm microclimate in the garden. (TÁBORSKÁ, PÉNZES-KÓNYA 2017).

The information about plant species and individual plants are stored in a database, which consists of two Excel table (one for trees and the other for herbaceous plants) and ArcGIS maps. The number of species is of course constantly changing: in 2015 we started with about 100 tree species and 150 herbaceous plant species. Currently, there are 162 tree species and 550 herbaceous plant species are registered in the garden, of which 104 species are protected by law in Hungary. New species have been collected as seed in natural habitats or from private gardens and public parks, a significant part derived from seed exchange with different European botanic gardens, and others we obtained from botanists, researchers and private persons. Unfortunately, there is still no existing database for greenhouse plants.

Besides the Erasmus program, the seed exchange means the opportunity to keep in touch with other European colleagues. The first Index Seminum was issued in 2016 and since then we have processed 92 seed requests (fig. 2). Other possibilities to follow the actual events on the European or even global level are our participation in international conferences (International Environmental Education Conference, Eger 2016, the 3rd Conference of Eastern and Central European Botanic Gardens, Budapest 2017, the IXth European Botanic Garden Congress, Budapest 2022) and workshop of wild orchids organized by Planta Europa, 2015.

The budget, facilities and garden equipment are supported by university financial resources or from different EU operational projects or national funds (Preservation of the botanical garden of Eszterházy Károly College – KEOP 3.1.2/09-11, Development of international research environment for light pollution studies – EFOP-3.6.2-16-2017-00014, Preservation of genetic material – VP4-10.2.2.-20). We provide free entry for all visitors and our educational programs are free as well.

Apart from guided walks, we offer a variety of educational programs for people of all ages. As we are a university garden, the lectures for our students are held in the place, however, the most frequent visitors to the botanical garden are groups of primary school students. Our programs aim to explore more than just identifying plant species and their relevance to humans. We strive to encourage fresh perspectives, such as understanding how plants interact with their environment, particularly in relation to insects, animals, and their role in the food chain. We try to make programs to be interesting and interactive as much as possible. The botanical garden environment has a relaxing effect on students, so new knowledge could be absorbed nearly unintentionally and spontaneously through didactic games, competitions, scavenger or treasure hunts and specially prepared workshops (TÁBORSKÁ, HOROTÁN 2022). Certain pro-

grams are associated with national or international days of importance, such as Earth Day, Birds and Trees Day, Arboreta Day, Museums Night, Researcher's Night, and more.

Year	Number of BG requests (Desiderata)	Number of sent seed items
2017	9	78
2018	6	37
2019	14	73
2020	16	97
2021	29	210
2022	18	119
<b>Total</b>	<b>92</b>	<b>614</b>

Figure 2: The number of seed requests from botanic gardens (BG) and the number of seed items processed between 2017-2023.

In the past years, we had participated in a one-week program series called Week of Botany, usually held for the general public. The School Garden project helped children develop practical skills. During the Covid-19 pandemic in 2021, the garden remained open for regular gardening sessions aimed at international students. This was done to help them overcome feelings of isolation. The botanical garden serves as a site for university students to gain professional experience and for high school students to engage in volunteer work. Cooperation with the students from the Media and Design Institute proved to be highly productive as they developed a fresh web design and logo for the botanical garden. (SÁNDOR 2022).

Regarding scientific research two main, long-time projects have been conducted in the botanical garden: Phytochemical evaluation of *Mentha longifolia* (PATONAY 2022) and Investigation of insect attraction effect of lamps with different color temperatures (GYARMATHY et al. 2021). The list of moss flora and the potentially invasive species were also compiled and evaluated (Szűcs et al. 2017, Kovács et al. 2023).

### Challenges and future prospects

Similarly, to some other Hungarian botanical gardens (KÓSA et al. 2004), we are often struggling with lack of staff members and insufficient spaces for edu-

cational activities. There a plan for a small visitor centrum with a gardening facility has been already elaborated, but the realization was postponed due to a lack of funds.

The botanical garden is situated on the edge of the town, on the top of the hill, so its accessibility could be limited for some people. This can be the reason why it is still not considered one of the main tourist attractions in Eger. In addition, our greenhouse is not placed in the botanical garden, it is ten minutes' walk from the garden in Leányka Campus of Eötvös Loránd University.

The garden is surrounded mainly by abandoned agricultural and peri-urban areas, where some invasive alien plant species are rapidly spreading (e.g. *Solidago* spp., *Ailanthus altissima*, *Robinia pseudoacacia*, *Acer negundo*, *Calamagrostis epigeios* or *Asclepias syriaca*). The presence and spreading tendencies of the invasive species are regarded the real thread for the maintenance of the botanical garden. Till the time we have been able to eliminate such individuals, but their occurrence must be constantly monitored. Wild boar and roe deer regular visits are another problem for the plant collections (with their trampling, browsing and propagation of weed plant species). The only solution in this case is to reinforce the fence around the garden.

In the recent times, our conifers are used to be attacked by fungal diseases or pests, which is the reason for their mass death. They will probably be replaced by resistant deciduous trees.

In the future, the possible solution could be stronger advertising and website development, the establishment of the garden foundation and a call for volunteers and supporters from the wider community apart from the university platform. We need to win the support of partner companies or associations and apply for international funds to build new garden facilities for visitors and educational activities. The botanical garden already protects high natural values, it is a crucial place where people and nature meet.

## References

- BIHARI Z., BABOLCSAI GY., BARTHOLY J., FERENCZI Z., GERHÁTNÉ KERÉNYI J., HASZPRA L., HOMOKI-UJVÁRY K., KOVÁCS T., LAKATOS M., NÉMETH Á., PONGRÁCZ R., PUTSAY M., SZABÓ P., SZÉPSZÓ G. (2018). Climate. In: Kocsis, K. (Editor-in-Chief): National Atlas of Hungary – Natural environment. Budapest, MTA CSFK Geographical Institute. pp. 58–69.
- GYARMATHY, I., KOROMPAI, T., NOVÁK, R., VARGA, J., DOMBOS, M. (2021). Investigation of insect attraction effect of lamps with different color temperatures. Acta Universitatis de Carolo Eszterházy Nominatae. Sectio Biologiae, Eszterházy Károly Catholic Egyetem Tudományos Közleményei. Tanulmányok a Biológiai Tudományok Köréből, 46. pp. 147–156. DOI: <https://doi.org/10.33041/ActaUnivEszterhazyBiol.2021.46.147>

- KOVÁCS, D., MÁLNÁSI-CSIZMADIA, G., SOMLYAI, M., TÁBORSKÁ, J., TÁLAS, L. M. (2023). Adatok hazai gyűjteményes kertekben elvaduló fajokról. (Data on spreading cultivated species in Hungarian botanical gardens). *Kitaibelia*, 28(1), 62–78. DOI: <https://doi.org/10.17542/kit.28.006>
- KRISHNAN, S., NOVY, A. (2016). The role of botanic gardens in the twenty-first century. CAB International (Online ISSN 1749-8848) <http://www.cabi.org/cabreviews> DOI: <https://doi.org/10.1079/PAVSNNR201611023>
- MOLNÁR Z., KIRÁLY, G., FEKETE, G. (Eds.) (2018). Vegetation of Hungary, subchapter: Floristic division and floristic elements of Hungary, In: Kocsis, K. (Editor-in-Chief): National Atlas of Hungary – Natural environment. Budapest, MTA CSFK Geographical Institute. pp. 96–97.
- PATONAY, K. (2022). Phytochemical evaluation of Northern Hungarian horsemint (*Mentha longifolia* (L.) L. populations. 173 p., Hungarian PhD (Thesis), Hungarian University of Agricultural and Life Sciences, Institute of Horticultural Science, Department of Medicinal and Aromatic Plants.
- PÉNZES-KÓNYA, E., PAPP, L., TÓTH, Z. (2015). Ex Situ Conservation Programme in the Botanical Garden of Eszterházy College. In 7th Planta Europa Conference: Plants for People, People for Plants, 84–101. DOI: <https://doi.org/10.13140/RG.2.1.2783.1123>
- PÉNZESNÉ, K. E., TÁBORSKÁ, J. (2023). The Role of Botanical Garden in Education and Plant Conservation toward the new Biodiversity and Plant Conservation Strategy, In: PULLAIAH, T. (Eds.), GALBRAITH, D.A. (Eds.): Botanical Gardens and their Role in Plant Conservation, CRC Press DOI: <https://doi.org/10.1201/9781003282150-6>
- SZÜCS, P., TÁBORSKÁ, J., BARANYI, G., PÉNZES-KÓNYA, E. (2017). *Short-term changes in the bryophyte flora in the botanical garden of Eszterházy Károly University (Eger, NE Hungary)* *Acta Biologica Plantarum Agriensis*. 5 (2). pp. 52–60. ISSN 2061-6716 DOI: <https://doi.org/10.21406/abpa.2017.5.2.52>
- TÁBORSKÁ, J., HOROTÁN, K. (2022). Be inspired! Interactive educational activities at Botanical Garden of Eszterházy Károly Catholic University (Hungary). Poster. EuroGard 9, European Botanic Garden Congress, 2022.05.16–20, Budapest.
- TÁBORSKÁ, J., PÉNZES-KÓNYA, E. (2017). The evaluation of rare plant species growing conditions at Botanical Garden of Eszterházy Károly University in Eger, North-East Hungary. In 3rd Conference of Eastern and Central European Botanic Gardens, pp. 31–31.



## **Internet sources**

- KÓSA, G., TIHANYI, GY., ZSIGMOND, V. (2004). Magyar Arborétumok és Botanikus Kertek Szövetsége – Szakmai Konceptió a hazai botanikus kertek és arborétumok örökölt nehézségeinek felszámolására, illetve a természetvédelemben és a környezeti nevelésben betöltött szerepük kiteljesítésére. (Professional Concept for eliminating the inherited difficulties of Hungarian botanical gardens and arboreta, and for fulfilling their role in nature conservation and environmental education). <https://adoc.pub/magyar-arboretumok-es-botanikus-kertek-szvetsege-mabosz-szak.html>
- SÁNDOR, V. (2022). Botanical Garden EKCÚ (Botanikus Kert EKKE). EKCÚ Media and Design Institute, Eger. ([https://www.behance.net/gallery/144219503/Botanical-Garden-EKKE-Botanikus-Kert-EKKE?tracking\\_source=search\\_projects%7Cgardening](https://www.behance.net/gallery/144219503/Botanical-Garden-EKKE-Botanikus-Kert-EKKE?tracking_source=search_projects%7Cgardening))