



## 5+1 REASONS TO PLANT UNTRAINED SAPPLINGS IN CITIES INSTEAD OF PRE-GROWN NURSERY TREES

Experiences of Municipality of Hegyvidék, district 12 of Budapest

*The case study is based on a discussion (BiodiverCity Café online partner meeting) with Dr. Zsolt Debreczy, an internationally known dendrologist, co-founder of the International Dendrological Foundation (IDF), Doctor Honoris Causa of Corvinus University Budapest, developer of the invaluable dendrological collection of the Hungarian Natural History Museum and the (IDF's) Budakeszi Herbarium, author of several books including the world monograph titled "Conifers Around the World."*

*"Years ago, I was walking in Budapest and saw a *Quercus pubescens* (oak) sapling on the street, a native and resilient species. I wondered whether using 50-60 cm tall forestry saplings on the street is perhaps too small to start with, but I also imagined a wonderful tree alley of this native species. I contacted the Green Office of the Municipality of Hegyvidék, district 12 of Budapest to experiment, and they welcomed the idea" – says Zsolt about the story of this unique initiative.*

The municipality of Hegyvidék developed a tree replacement strategy for the district within the Urban Green Belts (UGB) CENTRAL EUROPE project, with special attention to district trees and tree rows, in collaboration with experts from the International Dendrological Foundation. Following the creation of the strategy, the municipality launched the Hegyvidék Sapling and Young Tree Program in 2019, in which it began the experimental planting of young, untrained saplings in the district instead of pre-grown nursery trees.

The goal of the program is to grow the trees in their final location from a young age, so that the roots develop while simultaneously adapting to the place, instead of experiencing stress after the "nursery welfare." It is expected that these untrained saplings will adapt better to their planting and habitat conditions than older



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saplings and, under proper conditions, will quickly catch up in growth with their more trained counterparts. The likelihood of sapling replacement also decreases. Their production does not involve significant horticultural work, and their price and related maintenance are much lower than that of repeatedly trained trees.



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The first site of the experimental program was the section of Nárcisz Street between Orbánhegyi Road and Istenhegyi Road. In May 2019, young Turkey oak (*Quercus cerris*), another regionally native oak species) tree saplings were planted in the approximately half-meter-wide “green” lane between the sidewalk and the roadway, where people often parked because of a school nearby. *“We planted 20 saplings. They were 150 cm tall, and 3 years later they were 4-6 m tall”* – says Zsolt that expectations came visible true.

Educational banners were placed on the stakes protecting the young trees. Alongside a summary of the program, passersby could also learn about the characteristics of the Turkey oak and based on leaf images, familiarize themselves with this species common in the forests of the Hegyvidék area. Since the planting, residents of neighbouring properties have adopted the saplings, even giving them names. They are all in good health today, only one dyed out, despite the historic drought Hungary faced in 2022.

In the second phase, in April 2020, the area between Mindszenty József Cardinal Square and the section between Kázmér Road and Kázmér Slope was planted with honey-producing saplings: almond tree, bee tree (*Tetradium daniellii*),

and over a hundred lavenders, and further drought resistant, Mediterranean species such as evergreen oaks, false olive (*Phillyrea*), smoke tree, Italian stone pine, several other honey-producing shrubs (e.g. chaste tree), buckthorn, bladder-enna (*Colutea arborescens*) and Spanish broom (*Spartium junceum*). Due to the rich variety of species, the flowering time is extended, providing food for pollinators for a longer period. At the third location, a small forest ecosystem was created utilizing a scarcely used grassy sidewalk along Mártonvölgy Street.

## ALL IN ALL, THE FOLLOWING IMPLICATIONS CAN BE FORMULATED FOR CITIES:



**Untrained saplings better adapt to the underground environment with their root systems.**

These saplings better adapt to local – rather tough – underground circumstances (pipes, dry soil) with their root system.



## Untrained saplings are more climate resilient and healthier in the - often brutal - urban weather conditions.

It is not easy at all to be an urban tree. They often face tough underground infrastructure and must grow in much drier air conditions, in compacted soil, coping with serious pollution and potential damage. Through urban heat islands and drought climate change makes this situation even harder. Nursery trees are usually grown under artificial conditions and thus they are not well-prepared for the urban environment.



Through buying untrained saplings (from forestry nurseries)



### it is possible to plant native species in urban areas

which are not readily available in nurseries, like Turkey oak, pubescent oak, and even sessile oak, because they grow slower and have strong tap roots which are more difficult to train for proper root-balling. Native species are usually more resilient to climate change.

## Untrained saplings are cheaper.

It is more extensive to buy, transport, plant and water much higher trees bought from nurseries. The average rate of drying up is higher in the case of nursery trees, thus their replacement is also more often needed. Also, smaller stakes can be used to support the untrained saplings.



### Untrained saplings need lower maintenance costs.

At Nárcisz Street the only maintenance need was to cut off lower branches. However, in the case of untrained saplings, better communication is needed as well as education of the technical staff (not to cut off the saplings' thin bark with string trimmer, for instance).

The use of native saplings is a

**great tool for education and awareness raising linked to biodiversity and climate action.**



However, it is important to mention that it is not possible to use untrained saplings everywhere (for example, in newly developed urban downtown areas, where visual and shadowing aspects are important), but their use on side streets can be very effective.



The International Dendrological Foundation was established in 1995 and has been operating as a public benefit organization since 2000. Among its goals, the foremost is the dissemination of knowledge about nature, the promotion of specialised and applied botanical knowledge - primarily in environmental protection and landscape aesthetics - and what is today referred to as "environmental education."

Special emphasis has been placed on the vegetation of the world's temperate zones, particularly the forests and trees of these regions, documenting natural forest communities, and their taxonomy, and generating funds to support such work. The Foundation is also active in scientific education, involving volunteers (nature enthusiasts), and gene preservation.



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One of its main activities is the preparation of a comprehensive work documenting the temperate zone forests and woody plants of the world from their original habitats, titled "World Atlas of Trees" /of the temperate zones (Dendrological Atlas). *"Since 1997, our continuously expanding, authentically documented living collection, which includes more than 2000 taxa, has been the site for gene preservation, naturalization, and selection work. An important part of the living collection is the dendrological nature trail around the Budakeszi Herbarium (250 000 pressed samples), where several hundred woody species from Central Asia, the Far East, North America, and the Mediterranean regions can be observed"*. Over the past two decades, building partly on previous personal and professional relationships, the Foundation has organized numerous dendrological expeditions in collaboration with several domestic and international organizations.