

Title: Biogeochemical and ecological characterization of natural and artificial waterbodies in Meise Botanic Garden

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Summary: Meise Botanic Garden (formerly National Botanic Garden of Belgium) is located in Meise, just north of Brussels. This research institute with its 90 ha large domain, harbors a unique collection of local and exotic plant species, ordered in a unique pattern mimicking natural assemblages in both temperate and tropical conditions. A wide variety of water bodies has been installed, both in the indoor (=greenhouses) and outdoor sections of the Garden. Natural streams and even spring areas are part of the domain around the Institute. Some of these water bodies are more than a century old.



Surprisingly, a chemical, biotic and abiotic characterization of these water bodies has never been performed. It is expected that the different conditions under which they occur (due to the structuring of populations in the Garden) has resulted in a large variability in e.g. trophic status of the water bodies and diatom communities. Earlier preliminary research on diatoms in two water bodies already showed an incredible diversity and abundance of diatom species. Three species new to science were recently described from these water bodies. Studying the different aquatic (eco)systems of the Botanic Garden characterizing the biological and ecological status of the water bodies is essential to assess future development plans.

The past few years, there is a growing interest in a better assessment of the European diatom flora which resulted in the recent description of a large number of new species. The unique features of the Botanic Garden water bodies, especially with its typical tropical indoor conditions, can therefore lead you to the discovery of one (or more) diatom species new to science.

Keywords: Meise Botanic Garden– community analysis – microscopical algae

Practical info: In total, 3-4 weeks of “field work” in the beautiful Botanical Garden is foreseen, in Summer 2022, to collect water samples for chemical analysis, to perform an abiotic characterization of the different waterbodies, to collect all historic information about the water bodies and to sample diatoms across 25 selected sample locations.

Samples will be analyzed in the ECOBE water quality lab and diatoms will be analyzed in the Diatom, Phycology & Myxomycete Unit at Meise Botanic Garden. As most of the research will be performed in Meise Botanic Garden, disposing of a personal car is a plus.
