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Phytoplankton composition of the urban man-made lakes of Yamoussoukro (Côte d'Ivoire)

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ABSTRACT

Objective: Spatial and seasonal variations of phytoplankton composition in the urban man-made lake of Yamoussoukro city has been analysed to identify the most representative species of these polluted urban lake.

Methodology and results: The composition of phytoplankton assemblage in urban man-made lakes of Yamoussoukro City were investigated from December 2015 to October 2017 on a bi-monthly basis, at 28 stations on 8 lakes. One hundred and Ninety six (196) phytoplankton taxa were identified representatives of 63 genera, 33 families, 17 orders, 8 classes and 5 phyla. Most of these genera belong to Chlorophyta (34.8 %) followed by Euglenophyta (30.39 %) next Cyanobacteria (19.11 %), Bacillariophyta (14.16%) and Dinophyta (0.9 %). The Genera *Trachelomonas* (23 taxa), *Scenedesmus* (20 taxa), *Phacus* (16 taxa), *Lepocinclis* (9 taxa) were found to be dominant (>10%) in phytoplankton taxonomic richness. The greatest species richness was found in the lake 5 (99 taxa) and the smallest was recorded in the lake 7 (9 taxa).

Conclusion and application of results: This study revealed a first inventory of phytoplankton taxa of the Yamoussoukro's urban man-made lakes and proposes a pattern of the spatio-temporal variability of the phytoplankton community. The lakes were rich in the number of taxa (196), because the waters of the lake are stagnant. Chlorophyta and Euglenophyta dominated the phytoplankton communities. The highest number of taxa (99) was recorded in the lake 5, while the lowest number of taxa (10) was found in the lake 7. The best represented genus are by order of importance, Trachelomonas (23 taxa) scenedesmus (20 taxa), Phacus (16 taxa) and Lepocinclis (9 taxa). The results of the study of phytoplankton in Yamoussoukro urban lakes could serve as references to evaluate the ecological health of water bodies.

Key words: phytoplankton, urban man-made lake, taxonomic richness, Yamoussoukro.