



Workshop B-Blooms 2 – 31/10/08

Cyanobacteria : a danger for the quality of our waters ?

9h30: J.-P. Descy

Introduction to the B-Blooms 2 project and their main objectives, the aims of the workshop: Presentation of the results, brainstorming around the cyanobacterial blooms comprehension and needs from users.

9h45: C. Bernard

A complete description of cyanobacteria, dynamics of blooms, their consequences and the strategy adopted by users in water bodies of the Paris area. The case of *Planktothrix agardhii* and microcystins ecotoxicology.

11h00: G. A. Codd

All about cyanotoxins: from historical reviews around the world to future immuno assay detection kits. The partnership of the University of Dundee in the B-Blooms project and proposals of guidelines for management developments.

11h30: A. Wilmotte

Molecular diversity and taxonomy of cyanobacteria. A description of molecular tools for toxicity detection. Examples of the detection of microcystin genes and DNA chips.

13h30: P. Vanormelingen

Cyanobacterial blooms in Flanders: Occurrence, toxicity and bloom dynamics.

13h50: A. Peretyatko

Cyanobacterial blooms in urban ponds (Brussels): prediction, prevention and remediation.

14h10: J.-P. Descy

Cyanobacterial blooms in Wallonia: toxicity, diversity, modelling and management. The case of Lake Falemprise.

14h20: E. Everbecq

Simulation of cyanobacteria in Lake Falemprise: deterministic model

15h00: Round table with managers and users committee

Introduction by J.-P. Descy: a major part of B-BLOOMS2 phase 2 will be devoted to transfer of knowledge, in order to help water managers and administrations to cope with the problems associated with cyanobacteria blooms, with special reference to monitoring blooms and assessment of risks associated to them.

Main points from the discussions

- Vlaams Milieu Maatschappij (VMM): The European Directive (2006) on bathing zones, in its art. 8, addresses explicitly the health risks associated with risks of cyanobacteria proliferation, the need of monitoring and management measures to be taken immediately when a health risks is identified, including information to the public. This requires the development of adequate decisional systems and of protocols in response to blooms.
- This implies developing alarm/prediction systems; quick bloom identification, based on microscopy and counts or other techniques. There is a need for defining criteria based on cell abundance (# of cells / ml) and on microcystin concentration. Guidelines already exist

(WHO, 1998, for microcystin concentration), as well as detailed description of safety plans (Chorus & Bartram, 1999; Chorus, in Huisman et al., 2005)

- Needs identified by users: training in identification of cyanobacteria (ISSeP); determination of microcystins (ELISA kits, HPLC analysis), including providing microcystin standard (request by VIVAQUA)
- When a bathing zone is closed because of risks associated with cyanobacteria, the typical question is “when can it be opened again”? In this respect, there is presently a general lack of socio-economical assessment of consequences of blooms
- There is no “quick fix” that would allow rapid improvement of water bodies submitted to blooms; it can be anticipated that, as in any project of lake restoration, management measures as nutrient reduction will not quickly have a significant effect in terms of bloom reduction (notably, even if nutrients inputs are reduced, this does not solve the problem of internal loading and release from the sediments); to some extent, each lake is a special case ...
- It is suggested that local management groups can be constituted, in order to implement control measures, assess health risk, organise information to the public and design management strategies (as for instance, for Lake Bambois, and hopefully for Lake Virelles, on which studies will be undertaken in 2009).

...