



Bathing Water Directive (2006/7/EC) in EU Including Bathing Water Profile with Emphasis on Cyanobacterial Proliferation

Andrea Törökne,

*National Institute of Environmental Health, Gyáli u. 2-6. Budapest, Hungary 1097, Phone:(36-1)476-1207, Fax: (36-1)476-1200--, e-mail:torok.andrea@oki.antsz.hu

INTRODUCTION

Bathing Water Directive 2006/7/EC (2006. 02.15.)

Repealing of Directive 76/160/CEE

Changes to the previous Directive :

Main purpose: to reduce the risk of bathing water borne gastroenteric and other diseases

Establishment of the Bathing Water Profile (BWP)

Assessment of the risk of cyanobacterial proliferation

By 2011 Bathing Water Profile should be built up by all EU member states.

Main concept: human health must be protected for hazardous (biological) environmental agents, like bacteria, cyanobacteria, etc.

ACTIVITY

(1) Bathing Water Profile (BWP) should contain:

(a) Physical, geographical and hydrological characteristics and important parameters determined in WFD for bathing water and its catchments

(b) Determination and evaluation of pollution sources

(c) Assessment of potential of cyanobacterial proliferation

(d) Assessment of proliferation of macroalgae

(e) In case of danger of short term pollution

- Forecast for duration and frequency of predicted short term pollution

- Details of the causes of pollution including the risk management and plans for elimination of pollution

- Identification and contact details of stakeholders responsible for management and actions

(f) Position of control point

(2) the classification of bathing water (good, sufficient or poor) for the BWP has to be updated regularly with regard to points a-f of item (1).

Risks caused by cyanobacterial proliferation

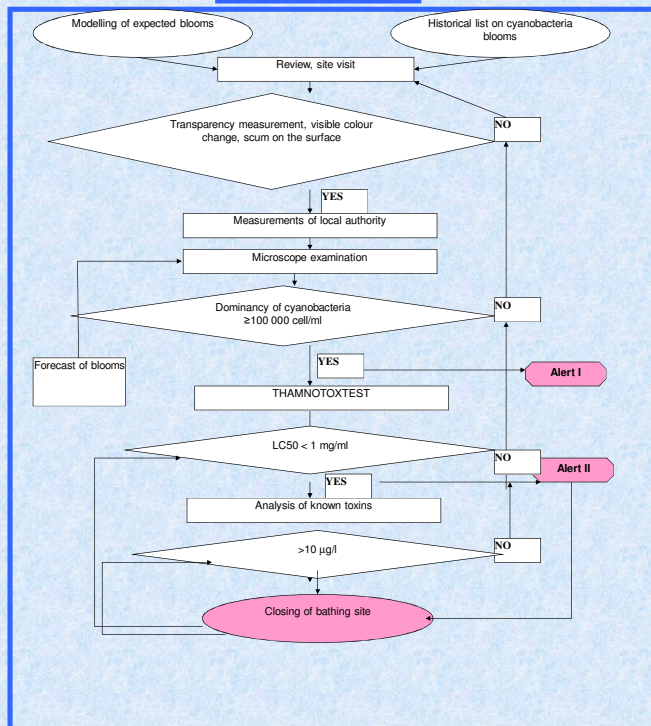
Article 8

(1) Monitoring should be built up to forecast the risk of possible adverse health effects caused by cyanobacterial proliferation occurring in any bathing water

(2) Risk management is to establish if the danger of exposure to a cyanobacterial bloom is likely, and to warn the bathers by release of information to the public



DECISION TREE



27-28. 06. 2007. Namur: decision of establishment of working groups

Development of a common data base

BWP is a tool in the hands of competent authorities to reach a good quality of bathing waters

Cost saving tool may be in the prioritisation of remediation programs

Synergisms have to be found between the information of WFD and BWD

Information to public bathers

14. 03. 2008.: kick off meeting, Brussels

Establishment of working groups

Definitions, determination of tasks

Description of bathing sites

Use of historical data

Finding out and determination of sources of pollution

Assessment of potential of cyanobacterial proliferation and biomass of macroalgae and marine phytoplankton

Information to public bathers

13-14. 10. 2008. Brussels

Review of documents, evaluation of first drafts

10-11. 02. 2009. Brussels

Presence of representative of EC (Henriette Faergemann)

Final drafts: approx. 80 pages +annexes

Early March 2009. providing the documents to DG Environment (Unit "Water Protection and Marine Environment")

May 2009. DG. Environment – Meeting of Water Directors: validation of documents

May 2009. DG. Environment – Meeting of Water Directors: validation of documents

Quick method for evaluation of toxicity caused by cyanobacteria with the Thamnotoxkit microbistest

- Filter 100 ml sample on a (preweighed) 0.45 µm membrane filter
- Dry filter to constant weight and determine the dry weight (DW) of the seston

- Calculate volume of water containing 4 mg DW seston and filter this volume on a 0.45 µm membrane filter

- Air-dry the filter and transfer it into a tube with 4 ml standard freshwater (from the Thamnotoxkit)

- Freeze and thaw the contents of the tube twice

- Centrifuge and recover the supernatant

- Make a dilution series of the supernatant in standard freshwater and perform a Thamnotoxkit assay

- Determine the 24h LC₅₀

- If LC₅₀ < 1 mg/ml, there is no toxic hazard for bathing

CONCLUSIONS

A common system had to be established in Europe to evaluate the risk in a similar way in all EU countries

This now becomes possible with the Bathing Water Profile

Natural cyanobacterial bloom samples cause various toxic, allergic and irritative symptoms in bathers

There is need to check the plankton composition continuously e.g. by digital holographic microscopy (DHM)

There is need to determine the toxicity quickly in fresh waters containing blooms in order to take appropriate decisions