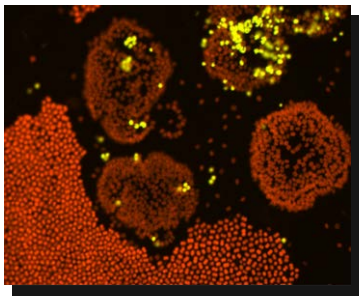
United States Environmental Protection Agency

November, 2016

Freshwater HABs News



Flow cytometry microscopy and hyperspectral imaging of microcystis (red) and algae (green). Photo by Robert Zucker, US EPA

New EPA Drinking Water Cyanotoxin Management Tools

EPA released three tools to help communities prepare for and reduce risks from cyanotoxins in drinking water. These tools are:

- Cyanotoxin Management Plan Template and Example Plans
  Framework for states, tribes and public water systems to develop their own system-specific cyanotoxin management plans.
- Water Treatment Optimization for Cyanotoxins Document
  Supports public water systems in developing monitoring and treatment optimization approaches for cyanotoxins to achieve the best performance possible from each treatment process.
- Drinking Water Cyanotoxin Risk Communication Toolbox
  Ready-to-use, "one-stop-shop" to support public water systems, states and local governments in developing, as they deem appropriate, their own risk communication materials.

NEWS* NEWS*

Available Water Filters Pitchers and Microcystin Removal Research

Stone Lab, The Ohio State University's island campus on Lake Erie, conducted a research to determine the ability of some commercially available filter pitchers to remove microcystin from tap water. The study showed that the biggest predictor of whether a pitcher filter using activated carbon will remove microcystin from water is how long it takes that water to percolate through the filter. Molecules like chlorine and microcystin stick to the carbon particles, while water molecules travel through the filter and into the pitcher.

UPCOMING EVENTS

Webinars

EPA's Water Research Webinars

Workshops

Developing a HAB Action Plan for Alaska
December 8–9, Alaska

Conferences

ASLO
February 26 to March 3, 2017, Hawaii

IAGLR
May 15-19, 2017
Detroit, Michigan

Gordon Research Conference
Biotoxins
June 18-23, 2017
Easton, MA

Useful Resources

- ✓ MN Anatoxin-a and Drinking Water Fact Sheet
- ✓ National Water Monitoring Newsletter
- ✓ OLA LAKEWISE Newsletter

Toxins Journal **Topical Collection "Freshwater HABs and Health in a Changing World"**

This Topical Collection serves as a forum to further discuss challenges in assessing freshwater HAB-associated effects on public health and the environment. Manuscripts are invited that provide information about exposure assessment; health outcomes; outbreak investigations; wild and domestic animal poisonings; toxicology of cyanobacterial toxins in animals and humans, and the production of toxins in the environment. Manuscripts on the absorption, distribution, and elimination of toxins in animals and humans, and the control of toxins in the built and natural environment, as well as related topics are also invited.

Go to www.mdpi.com and register to logging and to submit a manuscript.

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For more information, visit EPA's CyanoHABs website at www.epa.gov/cyanohabs

HABs, BEACH CLOSURES and HEALTH ADVISORIES, NOVEMBER 2016

- California
- Idaho
- Kansas
- Massachusetts
- Ohio
- Oregon
- Utah
- Washington

RECENTLY PUBLISHED ARTICLES

Community Needs Assessment After Microcystin Toxin Contamination of a Municipal Water Supply — Lucas County, Ohio, September 2014
Carolyn L. McCarty, PhD; Leigh Nelson, MPH; Samantha Eitniear, MPH, VPH; et al. *MMWR* Morb Mortal Wkly Rep 2016; 65: 925–9

A novel single-parameter approach for forecasting algal blooms
Xi Xiao, Junyu He, Haomin Huang, Todd R. Miller, George Christakos, Elke S. Reichwaldt, Anas Ghadouani, Shengpan Lin Xinhua XuJiyan Shi. Water Research. 31 October 2016.

Bioethanol from microalgae and cyanobacteria: A review and technological outlook
Carlos Eduardo de Farias Silva, Alberto Bertucco, Process Biochemistry, Volume 51, Issue 11, November 2016. 1833-1842.

An alternative method to quantify 2-MIB producing cyanobacteria in drinking water reservoirs: Method development and field applications
Yi-Ting Chiu, Hung-Kai Yen, Tsair-Fuh Lin, Environmental Research, Volume 151, November 2016. 618-627.

Producing next-generation biofuels from filamentous cyanobacteria: An economic feasibility analysis
Tylor J. Johnson, Arash Jahandideh, Myriah D. Johnson, KathrynAnn H. Fields, James W. Richardson, Kasiviswanathan Muthukumarappan, Yuhe Cao, ZhengRong Gu, Charles Halfmann, Ruanbao Zhou, William R. Gibbons; Algal Research; December 2016. 218-228

Adding value to the treatment of municipal wastewater through the intensive production of freshwater macroalgae
Andrew J. Cole, Nicolas Neveux, Anna Whelan, Jeff Morton, Mark Vis, Rocky de Nys, Nicholas A. Paul. Algal Research; December 2016. 100-109.

Photonfluxostat: A method for light-limited batch cultivation of cyanobacteria at different, yet constant, growth rates
Wei Du, Joeri A. Jongbloets, Hugo Pineda Hernández, Frank J. Bruggeman, Klaas J. Hellingwerf, Filipe Branco dos Santos. Algal Research; December 2016. 118-125.

Characterization of total retinoid-like activity of compounds produced by three common phytoplankton species
Eliška Sychrová, Jana Priebojová, Marie Smutná, Kateřina Nováková, Jiří Kohoutek, Klára Kilscherová. Harmful Algae; December 2016. 157-166

An overview of cyanobacterial bloom occurrences and research in Africa over the last decade
L.L. Ndlela, P.J. Oberholster, J.H. Van Wyk, P.H. Cheng, Harmful Algae, Volume 60; December 2016. 11-26.

An alternative explanation for cyanobacterial scum formation and persistence by oxygenic photosynthesis
E. Aparicio Medrano, R.E. Uittenbogaard, B.J.H. van de Wiel, L.M. Dionisio Pires, H.J.H. Clercx, Harmful Algae, Volume 60; December 2016. 27-35.

Education and notification approaches for harmful algal blooms (HABs), Washington State, USA
F. Joan Hardy, Debra Bouchard, Marisa Burghdoff, Ray Hanowell, Beth LeDoux, Ellen Preece, Lindsay Tuttle, Gene Williams. Harmful Algae, Volume 60; December 2016. 70-80.

The role of heterocytes in the physiology and ecology of bloom-forming harmful cyanobacteria
Lilen Yema, Elena Litchman, Paula de Tezanos Pinto, Harmful Algae, Volume 60; December 2016. 131-138.

To sign up for the newsletter please send an email to Dr. Lesley V. D'Anglada at ***danglada.lesley@epa.gov***