



Prof Dr. Zakaria A. Mohamed

Professor of Microbiology (Algal Toxins)- Head of Botany & Microbiology
Department, Faculty of Science, Sohag University

Citation indices	All	Since 2011
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Prof. Dr. Zakaria Atia Mohamed

Position: Professor

Specialization: Algal Toxins and Aquatic Toxicology

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Education and Degrees

- B.Sc. in Biology- Assiut University, Egypt-1990.
- M.Sc. in Botany (Algae) - Assiut University, Egypt-1994.
- Ph.D. in Microbiology (Algal toxins) –Wright State University, OH, USA, 1998.

Positions and Employment

- **Teaching Assistant-** Botany Department- Faculty of Science- Assiut University, Egypt (1990-1994).

- **Teaching Assistant**- Botany Department- Faculty of Science- Assiut University, Egypt (1994-1996).
- **Assistant Professor**- Botany Department- Faculty of Science- Sohag University, Egypt (1998-2003).
- **Associate Professor**- Botany Department- Faculty of Science- Sohag University, Egypt (2003-2008).
- **Visiting Professor**- Department of Biological Sciences, College of Science, King Khalid University, Saudi Arabia (2003-2011).
- **Professor**- Botany Department- Faculty of Science- Sohag University, Egypt (2008-present).

Honors & Awards

- Prize of young scientists in Environmental Sciences, UNESCO, 1999.
- SABIC (Saudi Arabia) grant supporting a research on toxic cyanobacteria in drinking water.
- The best presentation prize, Second International conference on Botany, Minia University Egypt (29-30 April 2012).
- Science Excellence Award, Sohag University, 2014.

Conferences & Workshops

- Gordon Conference on Mycotoxins and Phycotoxins- **New Hampshire, USA** (15-20 July, 1997).
- First National conference in Phycology- Suez canal University, Egypt (2000).
- Training Workshop on isolation and determinations of toxins and narcotics- Center of Toxins and narcotics- Cairo University (2000).
- The 8th International symposium on freshwater and marine Mycology- Hurgada- Egypt (2001).
- 8th International Symposium on Aquatic Microbial Ecology, Italy (20-25 October), 2002.
- Training workshop in e-learning- King Khalid University (2009).
- Training Workshop in Molecular Biology, King Khalid University (20-22 March, 2009).
- Second International conference on Botany, Minia University Egypt (29-30 April 2012).
- First international conference on Toxins in desert environments, Weill Cornell Medical College in Qatar (17-20 Feb. 2013).- Invited Speaker

- Third International conference on Biotechnology and its Applications in Botany and Microbiology, Helwan University Egypt (17-18 April 2013).
- Workshop on Monitoring Harmful algal blooms (red tides), Dubai (13-16 Apr. 2014).
- 6th International Conference on Natural Toxins, Ismailia, Egypt (15-16 Dec.2014).

Scientific societies

- Member of Egyptian Phycological Society.
- Member of European Water Resources Association (EWRA).
- Member of Saudi society of Biological Sciences.
- Member of Egyptian Botanical Society
- Member of Natural Toxins Society

Journals reviewer

- Toxicon (Elsevier).
- Environmental Toxicology (Wiley& Sons).
- Environmental Monitoring and Assessment (Springer).
- Biochemical Engineering(Elsevier).
- Ecotoxicology and Environmental safety (Elsevier).
- Environmental Toxicology and Chemistry, Society of Environmental Toxicology and Chemistry, SETAC Journals).
- Ecotoxicology (Springer) .
- Journal of International Society of Environmental Microbiology (ISME) (Nature Publishing Group)
- Water Research(Elsevier).
- Parlar Environment Bulletin (Parlar Scientific publication, Germany).
- Aquaculture Research (Wiley& Sons).
- Journal of Water and Health (IWA Publishing).
- Journal of Environmental Management (Elsevier).
- Limnology Journal (Springer).
- Journal of Phycology (Wiley& Sons).
- Journal of Hazardous Materials (Elsevier).
- FEMS Microbiology Ecology (Wiley& Sons).

Projects Reviewer

- Research projects submitted to King Abdul Aziz city for Science and technology.
- Research projects submitted to National Science Centre, Poland

Research interests

- Isolation and identification of Algal and cyanobacterial toxins.
- Detection of algal toxins in drinking waters and seafood.
- Removal of Algal toxins from drinking waters.
- Biodegradation of algal toxins by aquatic organisms.
- Effect of algal toxins on aquatic organisms, higher plants, wild and domestic animals, and human health.
- Environmental factors affecting the growth of harmful algae and toxin production.

Publications

1. **Mohamed, Z.A.** and Carmichael, W.W., An, J. and El-Sharouny, H. M. (1999). Activated carbon removal efficiency of microcystins in an aqueous cell extract of *Microcystis aeruginosa* and *Oscillatoria tenuis* strains isolated from Egyptian Freshwaters. *Environmental Toxicology and Water Quality*. 14: 197-201.
2. Brittain, S., **Mohamed Z.A.**, Wang, J., Lehmann, V.K.B., Carmichael, W.W. and Rinehart, K.L. (2000) Isolation and characterization of microcystin from a River Nile strain of *Oscillatoria tenuis* Agardh ex. Gomont. *Toxicon*. 38: 1759-1771.
3. **Mohamed, Z.A.** and Carmichael, W.W. (2000) Seasonal variation in microcystin levels of river Nile water at Sohag city, Egypt. *Annales De Limnologie*. 36(4): 227-234.
4. **Mohamed, Z.A.** (2001) Accumulation of cyanobacterial hepatotoxins by daphnia in some Egyptian irrigation canals. *Ecotoxicology and Environmental Safety*. 50: 4-8.
5. **Mohamed, Z.A.** (2001) Alum and lime-alum removal of toxic and nontoxic phytoplankton from the Nile river water: laboratory study. *Water Resources Management*. 15: 213-221.
6. **Mohamed, Z.A.** (2001) Removal of cadmium and manganese by a nontoxic strain of the freshwater cyanobacterium *Gloeotheca magna*. *Water Research*. 18: 4405-4409.
7. **Mohamed, Z.A.** (2002) Allelopathic activity of *Spirogyra* sp. Stimulating bloom formation and toxin production by *Oscillatoria agardhii* in some irrigation canals, Egypt. *Journal of Plankton Research*. 24(2): 137-141.

8. **Mohamed, Z.A.**, Abdel-Wahab, M.A. and El-Sharouny, H.M. (2002) Antimicrobial activity of an Egyptian marine cyanobacterium *Lyngbya majuscula* Gomont. Egyptian Journal of Phycology.3: 84-91.
9. Habib, T.N., El-Sawi, N.M. and **Mohamed, Z.A.** (2002) The antitumor effects of the Egyptian *Nigella sativa* L. oil induced by microcystin-LR in male mice. Journal of Union of Arab Biologists. 17(A): 541-556.
10. **Mohamed, Z.A.**, Carmichael, W.W. and Hussein, A.A. (2003) Estimation of microcystins in the freshwater fish farm containing a *Microcystis* bloom. Environmental Toxicology. 18: 137-141.
11. **Mohamed Z.A.** and Hussein, A.A. (2006). Depuration of microcystins in tilapia fish exposed to natural populations of toxic cyanobacteria: A laboratory study. Ecotoxicology and Environmental safety. 63: 424-429.
12. **Mohamed, Z.A.**, El-Sharouny, H. M., Ali, W.S.M. (2006). Microcystin production in benthic mats of cyanobacteria in the Nile River and irrigation canals, Egypt. Toxicon 47: 584-590.
13. Al-Shehri, A.M. and **Mohamed Z.A.** (2007) Mass occurrence and toxicity of the cyanobacterium *Lyngbya majuscula* under phosphorus-limited conditions in the Red Sea. Ecohydrology and Hydrobiology 7(1):51-57.
14. **Mohamed Z.A.** and Al-Shehri, A.M. (2006) Eukaryotic algal flora of surface water and wells derived from groundwater in the Asir region, including 13 new records for Saudi Arabia. Arab Gulf Journal of Scientific Research 24(3): 121-130.
15. **Mohamed, Z.A.** and Abdulrahman M. Al-Shehri (2008) Cyanobacteria of Surface and Ground Waters in Asir region with Fifteen New Records to Saudi Arabia. J. King Abdul Aziz Univ. JKAU: Sci., 20 , 113-129 .
16. Al-Shehri, A.M. and **Zakaria A. Mohamed.** (2009) Diatoms of Surface and Ground waters in Asir Region, with seven new records to Saudi Arabia. Journal of King Saud University (Science). 21(1), 17-24.
17. **Mohamed Z.A.** (2007) First report of toxic *Cylindrospermopsis raciborskii* and *Raphidiopsis mediterranea* (Cyanoprokaryota) in Egyptian fresh waters. FEMS Microbiology Ecology 59(3):749-61.
18. **Mohamed, Z.A.**, El-Sharouny, H. M., Ali, W.S.M (2007) Microcystin Concentrations in the Nile River Sediments, and Removal of Microcystin-LR by Sediments during Batch Experiments. Archives of Environmental Contamination and Toxicology 52(4):489-95.
19. **Mohamed, Z.A.** and Messad, I. (2007) First report on *Noctiluca scintillans* blooms in the Red Sea off the coasts of Saudi Arabia: consequences of eutrophication. Oceanologia 49(3):337-351.

20. **Mohamed Z.A** and AlShehri AM (2007) Cyanobacteria and their toxins in treated-water storage reservoirs in Abha city, Saudi Arabia. *Toxicon*.50 (1):75-84.
21. **Mohamed ZA** (2008) Toxic cyanobacteria and cyanotoxins in public hot springs in Saudi Arabia. *Toxicon* 51: 17-27.
22. **Mohamed Z.A.** (2008) Polysaccharides as a protective response against microcystin-induced oxidative stress in *Chlorella vulgaris* and *Scenedesmus quadricauda*; and their possible significance in the aquatic ecosystem. *Ecotoxicology* 17:504-516.
23. **Mohamed Z.A. and AlShehri A.M.** (2009) Microcystins in groundwater wells and their accumulation in vegetable plants irrigated with contaminated waters in Saudi Arabia. *Journal of Hazardous Materials*. 172, 310-315
24. **Mohamed Z.A and Al-Shehri A.M.** (2009) Microcystin-producing bloom of *Anabaenopsis arnoldi* in a potable mountain lake In Saudi Arabia. *FEMS microbiology Ecology*.69:98-105.
25. **Mohamed Z.A** and Al-Shehri A.M. (2010) Microcystin production in epiphytic cyanobacteria on submerged macrophytes. *Toxicon* 55(7):1346-1352.
26. **Mohamed Z.A.** and Al-Shehri A.M. (2010) Differential responses of epiphytic and planktonic toxic cyanobacteria to the allelopathic substances of the submerged macrophyte *Stratiotes aloides* *International Review of Hydrobiology* 95(3):224-234.
27. **Mohamed Z.A.** and Al-Shehri, A.M., 2011. Occurrence and germination of dinoflagellate cysts in surface sediments from the Red Sea off the coasts of Saudi Arabia. *OCEANOLOGIA*, 53 , 121–136.
28. **Mohamed Z.A.** and Al-Shehri (2012) The link between shrimp farm runoff and blooms of toxic *Heterosigma akashiwo* in the Red Sea coastal waters. *Oceanologia*. 54(2), 287-309.
29. **Mohamed Z.A.** and Alamri S.A. (2012) Biodegradation of cylindrospermopsin toxin by microcystin-degrading bacteria isolated from cyanobacterial blooms. 60, 1390-1395.
30. **Mohamed Z.A.** and Al-Shehri (2013) Assessment of cylindrospermopsin toxin in an arid Saudi lake containing dense cyanobacterial bloom. *Environmental Monitoring and Assessment*. 185, 2157-2166.
31. Alamri S.A. and **Mohamed Z.A.** (2013) Selective inhibition of toxic cyanobacteria by β -carboline-containing bacterium *Bacillus flexus* isolated from Saudi freshwaters. *Saudi Journal of Biological Sciences*. 20, 357-363
32. **Mohamed Z.A.** (2013) Allelopathic activity of the norharmane-producing cyanobacterium *Synechocystis aquatilis* against cyanobacteria and microalgae. *Oceanological and Hydrobiological studies*. 42, 1-7.

33. **Mohamed Z.A.** and Al-Shehri A.M. (2013) Grazing on *Microcystis aeruginosa* and degradation of microcystins by the heterotrophic flagellate *Diphyllia rotans*. *Ecotoxicol. Environ. Safe.* 96, 48-52.
34. **Mohamed Z.A.** (2013) Toxic effect of norharmane on a freshwater plankton community. *Ecohydrology and Hydrobiology.* 13, 226-232.
35. **Mohamed, Z.A.,** Hashim, M., Alamri, S.A. (2014) Growth inhibition of the cyanobacterium *Microcystis aeruginosa* and degradation of its microcystin toxins by the fungus *Trichoderma citrinoviride*. *Toxicon.* 86, 51-58.
36. **Mohamed, Z.A.** and Al-Shehri, A.M. (2015) Biodiversity and toxin production of cyanobacteria in mangrove swamps in the Red Sea off the southern coast of Saudi Arabia. *Botanica Marina.* 58(1): 23–34.
37. **Mohamed, Z. A.,** Deyab, M. A., Abou-Dobara, M. I., Kamel, A., El-Raghi, W. M. (2015) Occurrence of cyanobacteria and microcystin toxins in raw and treated waters of the Nile River, Egypt: Implication for water treatment and human health. *Environmental Science and Pollution Research* 22, 11716-11727
38. **Mohamed, Z. A.** (2016) Breakthrough of *Oscillatoria limnetica* and microcystin toxins into drinking water treatment plants- examples from the Nile River, Egypt. *Water SA* 42 (1), 161-165.
39. Mohamed, Z.A. , Deyab, MA, Abou-Dobara M I. , El-Raghi, W M. (2016) Occurrence of toxic cyanobacteria and microcystin toxin in domestic water storage reservoirs, Egypt. *Journal of Water Supply: Research and Technology – AQUA.* 65 (5) 431-440
40. Mohamed, ZA (2016) Harmful cyanobacteria and their cyanotoxins in Egyptian fresh waters – state of knowledge and research needs. *African Journal of Aquatic Research* 41(4) (In Press

Book Chapters

Mohamed Z.A. (2011) Cyanotoxins in Egypt and Saudi Arabia, In: *Encyclopedia of Environmental Health*, J. O. Nriagu (Ed.), Elsevier, pp. 872-880.

Mohamed, Z.A. (2016). Cyanobacterial Toxins in Water Sources and Their Impacts on Human Health. In A. McKeown, & G. Bugyi (Eds.) *Impact of Water Pollution on Human Health and Environmental Sustainability* (pp. 120-149). Hershey, PA: . doi:10.4018/978-1-4666-9559-7.ch006

