

REFERENCES

- Azuma, K., Mori, T., Kawamoto, K., Kuroda, K., Tsuka, T., Imagawa, T., Okamoto, Y. (2014). Anti-inflammatory effects of ozonated water in an experimental mouse model. *Biomedical reports*, 2(5), 671–674.
- Bettelheim, KA. (2003) *The genus Escherichia* In *The Prokaryotes: An Evolving Electronic Resource for the Microbiological Community*. 3th ed. Springer-Verlag; New York, NY, USA
- Beck, S.E., Ryu, H., Boczek, L.A., Cashdollar, J.L., Jeanis, K.M., Rosenblum, J.S., Lawal, O.R., Linden, K.G., 2017. Evaluating UV-C LED disinfection performance and investigating potential dual-wavelength synergy. *Water Res.* 109, 207e216.
- Biswas, P. and Bandyopadhyaya, R. (2016) ‘Water disinfection using silver nanoparticle impregnated activated carbon: *Escherichia coli* cell-killing in batch and continuous packed column operation over a long duration’, *Water Research*. Elsevier Ltd, 100, pp. 105–115.
- Bowker, C., Sain, A., Shatalov, M., Ducoste, J., (2011). Microbial UV fluence-response assessment using a novel UV-LED collimated beam system. *Water Res.* 45 (5), 2011e2019.
- Chevremont, A.C., Farnet, A.M., Coulomb, B., Boudenne, J.L., 2012. Effect of coupled UV-A and UV-C LEDs on both microbiological and chemical pollution of urban wastewaters. *Sci. Total Environ.* 426, 304e310.
- Cabral, João P.S. (2010) *Water Microbiology. Bacterial Pathogens and Water*, Retrieved 27 June 2019, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2996186/#b87-ijerph-07-03657>

- Carlucci, A. F., & Pramer, D. (1960). An evaluation of factors affecting the survival of *Escherichia coli* in sea water. II. Salinity, pH, and nutrients. *Applied microbiology*, 8(4), 247–250.
- CDC (2020) Disinfection with Chloramine [ONLINE] Available at: <https://www.cdc.gov/healthywater/drinking/public/chloramine-disinfection.html>. [Accessed 24 June 2020].
- CDC (2020) Disinfection with Chlorine [ONLINE] Available at: <https://www.cdc.gov/healthywater/drinking/public/chlorine-disinfection.html>. [Accessed 24 June 2020].
- CDC (2020) Rainwater Collection [ONLINE] Available at: <https://www.cdc.gov/healthywater/drinking/private/rainwater-collection.html>. [Accessed 23 June 2020].
- CDC (2020) Solar Disinfection, The Safe Water System [ONLINE] Available at: <https://www.cdc.gov/safewater/solardisinfection.html>. [Accessed 07 July 2020].
- Chang, Q., He, H. and Ma, Z. (2008) ‘Efficient disinfection of *Escherichia coli* in water by silver loaded alumina’, *Journal of Inorganic Biochemistry*, 102(9), pp. 1736–1742.
- Chatterley, C., Linden, K., (2010) Demonstration and evaluation of germicidal UV-LEDs for point-of-use water disinfection. *J. Water Health* 8 (3), 479e486.
- Drinking water, (n.d.), Retrieved: 10 May 2019, from <https://www.cdc.gov/healthywater/drinking/index.html>
- dos Santos, A. B. K., Claro, E. M. T., Montagnolli, R. N., Cruz, J. M., Lopes, P. R. M., Bidoia, E. D. (2017) ‘Electrochemically assisted photocatalysis: Highly efficient treatment using thermal titanium oxides doped and non-doped

- electrodes for water disinfection', *Journal of Environmental Management*. Elsevier Ltd, 204, pp. 255–263.
- Duffy, E. F., Al Touati, F., Kehoe, S.C., McLoughlin, O.A., Gill, L.W., Gernjak, W., Oller, I., Maldonado, M.I., Malato, S., Cassidy, J., Reed, R.H., McGuigan, K.G., (2004) 'A novel TiO₂-assisted solar photocatalytic batch-process disinfection reactor for the treatment of biological and chemical contaminants in domestic drinking water in developing countries', *Solar Energy*, 77(5), pp. 649–655.
- Eijkman, C. (1904) Die garungsprobe bei 46° als hilfsmittel bei der trinkwasseruntersuchung. *Zentr. Bakteriolog. Parasitenk. Abt. I. Orig.* 37:742.
- Green, A.E.S., Sawada, T., Shettle, E.P., (1974) Middle ultraviolet reaching ground. *Photochemistry and Photobiology* 19 (4), 251e259.
- Guo, L. Ding, K., Rockne, K., Duran, M., Chaplin, B. (2016) 'Bacteria inactivation at a sub-stoichiometric titanium dioxide reactive electrochemical membrane', *Journal of Hazardous Materials*. Elsevier B.V., 319, pp. 137–146.
- Halkman, H. B. D., & Halkman, A. K. (2014). Indicator Organisms. *Encyclopedia of Food Microbiology*, 358–363.
- Harding, A. S. and Schwab, K. J. (2012) 'Using limes and synthetic psoralens to enhance solar disinfection of water (SODIS): A laboratory evaluation with norovirus, *Escherichia coli*, and MS2', *American Journal of Tropical Medicine and Hygiene*, 86(4), pp. 566–572.
- Hasyim (2013) Air Isi Ulang Sistem RO Lebih Diminati, Retrieved: 14 May 2019, from <http://aceh.tribunnews.com/2013/02/23/air-isi-ulang-sistem-ro-lebih-diminati>
- Healthy water, (n.d.), Retrieved: 10 May 2019, from https://www.cdc.gov/healthywater/drinking/public/water_sources.html

- Hendrayanto (2004) Watershed and Water Resources Management in Indonesia: An Overview of Forest Degradation and Present Situation of Water Resources Supply and Efficient Utilization for Human Survival and Bioproduction, p. 7-8, quoting BPS-Statistic Indonesia figures for 2002, retrieved on June 23 2020
- Huang, J. J., Hu, H., Wu, Y., Wei, B., Lu, Y. (2013) 'Effect of chlorination and ultraviolet disinfection on tetA-mediated tetracycline resistance of Escherichia coli', *Chemosphere*. Elsevier Ltd, 90(8), pp. 2247–2253.
- Huang, J., Huang, G., An, C., Xin, X., Chen, X., Zhao, Y., Feng, R., Xiong, W. (2020) 'Exploring the use of ceramic disk filter coated with Ag/ZnO nanocomposites as an innovative approach for removing Escherichia coli from household drinking water', *Chemosphere*. Elsevier Ltd, 245, p. 125545.
- Huo, Z., Liu, H., Yu, C., Wu, Y., Hu, H., Xie, X. (2019) 'Elevating the stability of nanowire electrodes by thin polydopamine coating for low-voltage electroporation-disinfection of pathogens in water', *Chemical Engineering Journal*, 369, pp. 1005–1013.
- Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O’Cathain A, Rousseau M-C, Vedel I. (2018) Mixed Methods Appraisal Tool (MMAT), Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada.
- Huang, J-J., Hu, H-Y., Wu, Y-H., Wei, B., Lu, Y (2013) 'Effect of chlorination and ultraviolet disinfection on tetA-mediated tetracycline resistance of Escherichia coli.', *Chemosphere*. England, 90(8), pp. 2247–2253.
- International Standard Organization (2016) ISO 15858:2016 - UV-C Devices — Safety information — Permissible human exposure. [ONLINE] Available at: <https://www.iso.org/standard/55553.html>. [Accessed 06 July 2020].

- Ireland, J. C., Klostermann, P., Rice, E W., Clark, R M (1993) ‘Inactivation of Escherichia coli by titanium dioxide photocatalytic oxidation.’, *Applied and Environmental Microbiology*, 59(5), pp. 1668 LP – 1670.
- Jin, Y., Shi, Y., Chen, R., Zhen, X., Zheng, X., Liu, Y. (2019) ‘Electrochemical disinfection using a modified reticulated vitreous carbon cathode for drinking water treatment’, *Chemosphere. Elsevier Ltd*, 215, pp. 380–387.
- Krokan, H. E., & Bjørås, M. (2013). Base excision repair. *Cold Spring Harbor perspectives in biology*, 5(4), a012583.
- Li, G., Wang, W., Huo, Z., Lu, Y., Hu, H., 2017. Comparison of UV-LED and low pressure UV for water disinfection: photoreactivation and dark repair of Escherichia coli. *Water Res.* 126, 34e143.
- Lui, G. Y., Roser, D., Corkish, R., Ashbolt, N. J., Stuetz, R. (2016) ‘Point-of-use water disinfection using ultraviolet and visible light-emitting diodes’, *Science of the Total Environment. Elsevier B.V.*, 553, pp. 626–635.
- Martinelli, M., Giovannangeli, F., Rotunno, S., Trombetta, C. M., & Montomoli, E. (2017). Water and air ozone treatment as an alternative sanitizing technology. *Journal of preventive medicine and hygiene*, 58(1), E48–E52.
- Mbonimpa, E. G., Vadheim, B. and Blatchley, E. R. (2012) ‘Continuous-flow solar UVB disinfection reactor for drinking water’, *Water Research. Elsevier Ltd*, 46(7), pp. 2344–2354.
- Menteri Perindustrian dan Perdagangan RI (2004) Keputusan Menteri Perindustrian dan Perdagangan RI Nomor 651 Tahun 2004 Tentang Persyaratan Teknis Depot Air Minum dan Perdaganganannya

- Ngwenya N, Ncube EJ, Parsons J. (2013) Recent advances in drinking water disinfection: successes and challenges. *Rev Environ Contam Toxicol.*;222:111–170
- Nyangaresi, P. O., Qin, Y., Chen, G., Zhuang, B. P., Lu, Y. H., Shen, L. (2018) ‘Effects of single and combined UV-LEDs on inactivation and subsequent reactivation of *E. coli* in water disinfection’, *Water Research*. Elsevier Ltd, 147, pp. 331–341.
- Oguma, K., Kita, R., Sakai, H., Murakami, M., Takizawa, S., (2013) Application of UV light emitting diodes to batch and flow-through water disinfection systems. *Desalination* 328, 24e30.
- Oram, Brian (2019), Water Research Center - Ozonation in Water Treatment.
[ONLINE] Available at: <https://www.water-research.net/index.php/ozonation>.
[Accessed 21 May 2019].
- Pal, P. (2017) Chemical Treatment Technology, *Industrial Water Treatment Process Technology* pp. 21-63
- Pathak, S. P. and Gopal, K. (2012) ‘Evaluation of bactericidal efficacy of silver ions on *Escherichia coli* for drinking water disinfection’, *Environmental Science and Pollution Research*, 19(6), pp. 2285–2290.
- Percival SL, Yates MV, Williams D, Chalmers R, Gray N. (2013) Ultraviolet disinfection. *Microbiology of waterborne diseases: microbiological aspects and risks*. London, UK: Elsevier Science; 620.
- Permenkes No 43 Tahun 2014 Tentang Higiene Sanitasi Depot Air Minum*
- Permenkes No 492 Tahun 2010 Tentang Persyaratan Kualitas Air Minum*
- Rain Water Harvesting (2020) Rain Water Harvesting. [ONLINE] Available at: <https://www.tn.gov.in/dtp/rainwater.htm>. [Accessed 23 June 2020].

- Rastogi, P.R., Richa, Kumar A., Tyagi, B.M., Sinha, P.R., 2010. Molecular mechanisms of ultraviolet radiation-induced DNA damage and repair. A review. *J. Nucleic Acids* 2010, 592980.
- Restaino, L., Frampton, E. W., Hemphill, J. B., & Palnikar, P. (1995). Efficacy of ozonated water against various food-related microorganisms. *Applied and environmental microbiology*, 61(9), 3471–3475.
- Rattanakul, S., Oguma, K., 2018. Inactivation kinetics and efficiencies of UV-LEDs against *Pseudomonas aeruginosa*, *Legionella pneumophila*, and surrogate microorganisms. *Water Res.* 130, 31e37.
- Richardson SD, Plewa MJ, Wagner ED, Schoeny R, Demarini DM. (2007) Occurrence, genotoxicity, and carcinogenicity of regulated and emerging disinfection by-products in drinking water: a review and roadmap for research. *Mutat Res.*;636(1-3):178-242.
- Scheutz, F., Strockbine, N. A. (2005) Genus *Escherichia* Bergey's Manual of Systematic Bacteriology. 2nd ed. Part B. Vol. 2. Springer; New York, NY, USA. pp. 607–623.
- Scott, D. B., & Leshner, E. C. (1963). Effect of Ozone on Survival and Permeability of *Escherichia coli*, *Journal of bacteriology*, 85(3), 567–576.
- Setlow, R.B., (1974). Wavelengths in sunlight effective in producing skin cancer - theoretical analysis. *Proceedings of the National Academy of Sciences of the United States of America* 71 (9), 3363e3366.
- Sommer, R., Lhotsky, M., Haider, T., Cabaj, A. (2000) 'UV inactivation, liquid-holding recovery, and photoreactivation of *Escherichia coli* O157 and other pathogenic *Escherichia coli* strains in water', *Journal of Food Protection*, 63(8), pp. 1015–1020.

- Statistics Indonesia. (2014). *Statistical Yearbook of Indonesia 2014*. Jakarta: BPS – Statistics Indonesia.
- Tenaillon, O., Skurnik, D., Picard, B., & Denamur, E. (2010). The population genetics of commensal *Escherichia coli*. *Nature Reviews Microbiology*, 8(3), 207–217
- Timmermann, L. F., Ritter, K., Hillebrandt, D., Küpper, T (2015) ‘Drinking water treatment with ultraviolet light for travelers – Evaluation of a mobile lightweight system’, *Travel Medicine and Infectious Disease*. Elsevier, 13(6), pp. 466–474.
- The Jakarta Post (2020) Surabaya wants to make all tap water in the city drinkable – National [ONLINE] Available at:
<https://www.thejakartapost.com/news/2019/03/25/surabaya-wants-to-make-all-tap-water-in-the-city-drinkable.html>. [Accessed 23 June 2020].
- Thirumalesh, D.H & Fathima, K (2015) A Microbiological Study of Bore Well Drinking Water in and Around Bengaluru Metro City, India
- Ubomba-Jaswa, E., Fernández-Ibáñez, P., Navntoft, C., Inmaculada Polo-Lópezb, M., McGuigana, K. G. (2010) ‘Investigating the microbial inactivation efficiency of a 25 L batch solar disinfection (SODIS) reactor enhanced with a compound parabolic collector (CPC) for household use’, *Journal of Chemical Technology and Biotechnology*, 85(8), pp. 1028–1037.
- UNEP/WHO (1996), *Water Quality Monitoring - A Practical Guide to the Design and Implementation of Freshwater Quality Studies and Monitoring Programs*, Chapter 10 – Microbiological Analyses
- US EPA (2010) Air and Radiation, Retrieved: 22 July 2020, from <https://www.epa.gov/sites/production/files/documents/uvradiation.pdf>

- US EPA (2020) Drinking Water Treatability Database. [ONLINE] Available at: <https://ofmpub.epa.gov/tdb/pages/treatment/treatmentOverview.do?treatmentProcessId=-1118142891>. [Accessed 24 June 2020].
- US EPA (2020) Green Infrastructure [ONLINE] Available at: <https://www.epa.gov/green-infrastructure>. [Accessed 23 June 2020].
- US EPA (2020) National Primary Drinking Water Regulations - Ground Water and Drinking Water, [ONLINE] Available at: <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>. [Accessed 23 June 2020].
- U.S. Food and Drug Administration (2020) BAM Chapter 4: Enumeration of Escherichia coli and the Coliform Bacteria | FDA. [ONLINE] Available at: <https://www.fda.gov/food/laboratory-methods-food/bam-chapter-4-enumeration-escherichia-coli-and-coliform-bacteria#fn14>. [Accessed 05 July 2020].
- UV, (n.d.), Retrieved: 22 May 2019, from <http://www.water-research.net/Waterlibrary/privatewell/UVradiation.pdf>
- Van Houten B. (1990). Nucleotide excision repair in Escherichia coli. *Microbiological reviews*, 54(1), 18–51.
- Vilhunen, S., Särkkä, H. and Sillanpää, M. (2009) ‘Ultraviolet light-emitting diodes in water disinfection’, *Environmental Science and Pollution Research*, 16(4), pp. 439–442.
- Washington State Department of Health (2020) Coliform in Drinking Water [ONLINE] Available at: <https://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/Contaminants/Coliform>. [Accessed 23 June 2020].

Water, (n.d.), Retrieved: 27 April 2019, from

<https://cameochemicals.noaa.gov/chemical/30024>

Water, (2019), Retrieved: 27 April 2019, from <https://www.who.int/topics/water/en/>

Water and Sanitation Challenges, (n.d.), Retrieved: 27 April 2019, from

<https://www.unicef.org/indonesia/wes.html>

Wolfe, R (1990) Ultraviolet disinfection of potable water. *Environ Sci Technol.*

24(6):768–773.

World Health Organization (2017) Guidelines for Drinking Water Quality

World Health Organization (2020) Ultraviolet radiation and health. [ONLINE]

Available at: https://www.who.int/uv/uv_and_health/en/. [Accessed 06 July 2020].

Zhao, Y., Huang, G. H., An, C. J., Huang, J., Xin, X. Y., Chen, X. J., Hong, Y. Y.,

Song, P. (2020) ‘Removal of Escherichia Coli from water using functionalized porous ceramic disk filter coated with Fe/TiO₂ nano-composites’, *Journal of Water Process Engineering*. Elsevier, 33(October 2019), p. 101013.