

## DAFTAR PUSTAKA

- Ajala, S. O., & Alexander, M. L. (2020). Assessment of *Chlorella vulgaris*, *Scenedesmus obliquus*, and *Oocystis minuta* for removal of sulfate, nitrate, and phosphate in wastewater. *International Journal of Energy and Environmental Engineering*, 11(3), 311–326. <https://doi.org/10.1007/s40095-019-00333-0>
- Ak, İ. (2012). Effect of an organic fertilizer on growth of blue-green alga *Spirulina platensis*. *Aquaculture International*, 20(3), 413–422. <https://doi.org/10.1007/s10499-011-9473-5>
- Alam, Md. A., & Wang, Z. (Eds.). (2019). *Microalgae Biotechnology for Development of Biofuel and Wastewater Treatment*. Springer Singapore. <https://doi.org/10.1007/978-981-13-2264-8>
- Atabani, A. E., Silitonga, A. S., Ong, H. C., Mahlia, T. M. I., Masjuki, H. H., Badruddin, I. A., & Fayaz, H. (2013a). Non-edible vegetable oils: A critical evaluation of oil extraction, fatty acid compositions, biodiesel production, characteristics, engine performance and emissions production. *Renewable and Sustainable Energy Reviews*, 18, 211–245. <https://doi.org/10.1016/j.rser.2012.10.013>
- Atabani, A. E., Silitonga, A. S., Ong, H. C., Mahlia, T. M. I., Masjuki, H. H., Badruddin, I. A., & Fayaz, H. (2013b). Non-edible vegetable oils: A critical evaluation of oil extraction, fatty acid compositions, biodiesel production, characteristics, engine performance and emissions production. *Renewable and Sustainable Energy Reviews*, 18, 211–245. <https://doi.org/10.1016/j.rser.2012.10.013>
- Barsanti, L., Vismara, R., Passarelli, V., & Gualtieri, P. (2001). Paramylon ( $\beta$ -1,3-glucan) content in wild type and WZSL mutant of *Euglena gracilis*. Effects of growth conditions. *Journal of Applied Phycology*, 13(1), 59–65. <https://doi.org/10.1023/A:1008105416065>
- Bezerra, M. A., Santelli, R. E., Oliveira, E. P., Villar, L. S., & Escalera, L. A. (2008). Response surface methodology (RSM) as a tool for optimization in analytical chemistry. *Talanta*, 76(5), 965–977. <https://doi.org/10.1016/j.talanta.2008.05.019>
- Budiman, A., Suyono, E. A., Dewayanto, N., Dewati, P. R., Pradana, Y. S., & Widawati, T. F. (2023). *Biorefinery Mikroalga* (D. Surani, Ed.). Gadjah Mada University Press.
- Chu, W.-L. (2017). Strategies to enhance production of microalgal biomass and lipids for biofuel feedstock. *European Journal of Phycology*, 52(4), 419–437. <https://doi.org/10.1080/09670262.2017.1379100>
- Costa, J. A. V., Freitas, B. C. B., Santos, T. D., Mitchell, B. G., & Morais, M. G. (2019). Open pond systems for microalgal culture. In *Biofuels from Algae* (pp. 199–223). Elsevier. <https://doi.org/10.1016/B978-0-444-64192-2.00009-3>
- Danilov, R. A., & Ekelund, N. G. A. (2001). Effects of pH on the growth rate, motility and photosynthesis in *Euglena gracilis*. *Folia Microbiologica*, 46(6), 549–554. <https://doi.org/10.1007/BF02818001>

- Dharmaraja, J., Shobana, S., Huy, M., Vatland, A. K., Ashokkumar, V., & Kumar, G. (2023). Design and scale-up of photobioreactors. In *Current Developments in Biotechnology and Bioengineering* (pp. 11–32). Elsevier. <https://doi.org/10.1016/B978-0-323-99911-3.00010-5>
- Elvitriana, Munir, E., Delvian, & Wahyuningsih, H. (2018). *Production of Lipid Biomass in Locally Isolated Microalga Cultivated in Palm Oil Mill Effluent (POME)* (pp. 533–538). <https://doi.org/10.1108/978-1-78756-793-1-00091>
- Erfianti, T., Fakhruddin Yusuf, A., Handayani, S., Ryan Sadewo, B., Setiadi Daryono, B., Budiman, A., & Agus Suyono, E. (2024). Enhancing growth and metabolite profiles in indigenous *Euglena gracilis* through explorative light spectrum effect. *Egyptian Journal of Aquatic Research*, 50(3), 318–331. <https://doi.org/10.1016/j.ejar.2024.09.003>
- Euglena Co., Ltd. (2021, June 4). *Achieved first flight using euglena biofuel A flight inspection aircraft owned and operated by the Ministry of Land, Infrastructure, Transport and Tourism flew and conducted flight inspection work while using renewable jet fuel*. <https://www.Euglena.jp/En/News/20210604-2/>.
- Faulina, R., Andari, S., & Anggraeni, D. (2011). *Response Surface Methodology (RSM) Dan Aplikasinya*.
- Gaitonde, V. N., Karnik, S. R., & Davim, J. P. (2012). Minimising burr size in drilling: integrating response surface methodology with particle swarm optimisation. In *Mechatronics and Manufacturing Engineering* (pp. 259–292). Elsevier. <https://doi.org/10.1533/9780857095893.259>
- Gissibl, A., Sun, A., Care, A., Nevalainen, H., & Sunna, A. (2019). Bioproducts From *Euglena gracilis*: Synthesis and Applications. *Frontiers in Bioengineering and Biotechnology*, 7. <https://doi.org/10.3389/fbioe.2019.00108>
- Häder, D.-P., & Hemmersbach, R. (2022). *Euglena*, a Gravitactic Flagellate of Multiple Usages. *Life*, 12(10), 1522. <https://doi.org/10.3390/life12101522>
- Hadiyanto, & Azim, M. (2012). *Mikroalga: Sumber Pangan & Energi Masa Depan (Pertama)*. UPT UNDIP Press.
- Han, J., Elgowainy, A., Cai, H., & Wang, M. Q. (2013). Life-cycle analysis of bio-based aviation fuels. *Bioresour Technol*, 150, 447–456. <https://doi.org/10.1016/j.biortech.2013.07.153>
- Hanief, S., Prasakti, L., Pradana, Y. S., Cahyono, R. B., & Budiman, A. (2020). *Growth kinetic of Botryococcus braunii microalgae using logistic and gompertz models*. 020065. <https://doi.org/10.1063/5.0030459>
- Hasan, M. T., Sun, A., Khatiwada, B., McQuade, L., Mirzaei, M., Te'o, J., Hobba, G., Sunna, A., & Nevalainen, H. (2019). Comparative proteomics investigation of central carbon metabolism in *Euglena gracilis* grown under predominantly phototrophic, mixotrophic and heterotrophic cultivations. *Algal Research*, 43, 101638. <https://doi.org/10.1016/j.algal.2019.101638>

- Hindarti, F., & Ayuningtyas, E. (2020). Pengembangan Teknik Kultivasi *Spirulina* sp. Sebagai Sumber Biomassa Energi Terbarukan Dalam Fotobioreaktor Airlift. *Jurnal Energi Dan Lingkungan (Enerlink)*, 16(1), 17–24. <https://doi.org/10.29122/jel.v16i1.4578>
- IATA. (2018). *Fact Sheet: Climate Change & CORSIA*.
- Jerney, J., & Spilling, K. (2018). *Large Scale Cultivation of Microalgae: Open and Closed Systems* (pp. 1–8). [https://doi.org/10.1007/7651\\_2018\\_130](https://doi.org/10.1007/7651_2018_130)
- Jung, J.-M., Kim, J. Y., Jung, S., Choi, Y.-E., & Kwon, E. E. (2021). Quantitative study on lipid productivity of *Euglena gracilis* and its biodiesel production according to the cultivation conditions. *Journal of Cleaner Production*, 291, 125218. <https://doi.org/10.1016/j.jclepro.2020.125218>
- Karimi, S., Mafton-Azad, L., Behnajady, B., & Tüzün, B. (2024). Response Surface Methodology (RSM) Design to Optimize the Cathode of Li-Ions Batteries Recycling in Deep Eutectic Solvent and DFT Simulation. *Korean Journal of Chemical Engineering*. <https://doi.org/10.1007/s11814-024-00288-x>
- Katam, G. B., A., V. B., K., M. M., & Warkhade, G. S. (2017). Review on algae for biodiesel fuel production, its characteristics comparison with other and their impact on performance, combustion and emissions of diesel engine. *World Journal of Engineering*, 14(2), 127–138. <https://doi.org/10.1108/WJE-06-2016-0012>
- Kim, S., Lee, D., Lim, D., Lim, S., Park, S., Kang, C., Yu, J., & Lee, T. (2020). Paramylon production from heterotrophic cultivation of *Euglena gracilis* in two different industrial byproducts: Corn steep liquor and brewer's spent grain. *Algal Research*, 47, 101826. <https://doi.org/10.1016/j.algal.2020.101826>
- Kitaya, Y., Azuma, H., & Kiyota, M. (2005). Effects of temperature, CO<sub>2</sub>/O<sub>2</sub> concentrations and light intensity on cellular multiplication of microalgae, *Euglena gracilis*. *Advances in Space Research*, 35(9), 1584–1588. <https://doi.org/10.1016/j.asr.2005.03.039>
- Kottuparambil, S., Thankamony, R. L., & Agusti, S. (2019). *Euglena* as a potential natural source of value-added metabolites. A review. *Algal Research*, 37, 154–159. <https://doi.org/10.1016/j.algal.2018.11.024>
- Kumari, A., Sharma, V., Pathak, A. K., & Guria, C. (2014). Cultivation of *Spirulina platensis* using NPK-10:26:26 complex fertilizer and simulated flue gas in sintered disk chromatographic glass bubble column. *Journal of Environmental Chemical Engineering*, 2(3), 1859–1869. <https://doi.org/10.1016/j.jece.2014.08.002>
- Lavens, P., & Sorgeloos, P. (1996). *Manual on the Production and Use of Live Food for Aquaculture* (J. de Caluwe, R. Bijnens, V. Magda, & M. Verschraeghen, Eds.).
- Lee, E., Jalalizadeh, M., & Zhang, Q. (2015). Growth kinetic models for microalgae cultivation: A review. *Algal Research*, 12, 497–512. <https://doi.org/10.1016/j.algal.2015.10.004>

- Lei, C., Nakagawa, Y., Nagasaka, Y., Ding, T., Kanno, H., Toyokawa, C., Niizuma, K., Suzuki, K., Li, M., Sunna, A., Hampl, V., & Goda, K. (2024). High-throughput optical imaging technology for large-scale single-cell analysis of live *Euglena gracilis*. *TrAC Trends in Analytical Chemistry*, *180*, 117938. <https://doi.org/10.1016/j.trac.2024.117938>
- Mahapatra, D. M., Chanakya, H. N., & Ramachandra, T. V. (2013). *Euglena* sp. as a suitable source of lipids for potential use as biofuel and sustainable wastewater treatment. *Journal of Applied Phycology*, *25*(3), 855–865. <https://doi.org/10.1007/s10811-013-9979-5>
- Manthos, G., Tsigkou, K., Koutra, E., Mingou, L., & Kornaros, M. (2024). Exploring the impact of microalgal fatty acid content on anaerobic digestion and methane production: An experimental and mathematical modeling study. *Renewable Energy*, *230*, 120859. <https://doi.org/10.1016/j.renene.2024.120859>
- Mata, T. M., Martins, A. A., & Caetano, Nidia. S. (2010). Microalgae for biodiesel production and other applications: A review. *Renewable and Sustainable Energy Reviews*, *14*(1), 217–232. <https://doi.org/10.1016/j.rser.2009.07.020>
- Mona, S., Kumar, S. S., Kumar, V., Parveen, K., Saini, N., Deepak, B., & Pugazhendhi, A. (2020). Green technology for sustainable biohydrogen production (waste to energy): A review. *Science of The Total Environment*, *728*, 138481. <https://doi.org/10.1016/j.scitotenv.2020.138481>
- Monod, J. (1949). The Growth Of Bacterial Cultures. *Annual Review of Microbiology*, *3*(1), 371–394. <https://doi.org/10.1146/annurev.mi.03.100149.002103>
- Montgomery, D. C. (2013). *Design and Analysis of Experiments* (8th ed.). John Wiley & Sons, Inc.
- Montgomery, D. C. (2017). *Design and Analysis of Experiments* (9th ed.). John Wiley & Sons Inc.
- Mulluye, K., Bogale, Y., Bayle, D., & Atnafu, Y. (2023). Review on Microalgae Potential Innovative Biotechnological Applications. *Biosciences Biotechnology Research Asia*, *20*(1), 35–43. <https://doi.org/10.13005/bbra/3066>
- Nagarajan, R., Dharmaraja, J., Shobana, S., Sermarajan, A., Nguyen, D. D., & Murugavelh, S. (2021). A comprehensive investigation on *Spirulina platensis* – Part I: Cultivation of biomass, thermo–kinetic modelling, physico–chemical, combustion and emission analyses of bio–oil blends in compression ignition engine. *Journal of Environmental Chemical Engineering*, *9*(3), 105231. <https://doi.org/10.1016/j.jece.2021.105231>
- Naik, S. N., Goud, V. V., Rout, P. K., & Dalai, A. K. (2010). Production of first and second generation biofuels: A comprehensive review. *Renewable and Sustainable Energy Reviews*, *14*(2), 578–597. <https://doi.org/10.1016/j.rser.2009.10.003>
- O’Neill, E. C., Trick, M., Hill, L., Rejzek, M., Dusi, R. G., Hamilton, C. J., Zimba, P. V., Henrissat, B., & Field, R. A. (2015). The transcriptome of *Euglena gracilis* reveals unexpected metabolic capabilities for carbohydrate and natural product

biochemistry. *Molecular BioSystems*, 11(10), 2808–2820.  
<https://doi.org/10.1039/C5MB00319A>

- Phukoetphim, N., Salakkam, A., Laopaiboon, P., & Laopaiboon, L. (2017). Kinetic models for batch ethanol production from sweet sorghum juice under normal and high gravity fermentations: Logistic and modified Gompertz models. *Journal of Biotechnology*, 243, 69–75. <https://doi.org/10.1016/j.jbiotec.2016.12.012>
- Puja Asiandu, A., Puspito Nugroho, A., Saifun Naser, A., Ryan Sadewo, B., Donny Koerniawan, M., Budiman, A., Juniarti Siregar, U., Tri Suwanti, L., & Agus Suyono, E. (2022). The Effect of Tofu Wastewater and pH on the Growth Kinetics and Biomass Composition of *Euglena* sp. *Current Applied Science and Technology*, 23(2). <https://doi.org/10.55003/cast.2022.02.23.010>
- Qin, S., Wang, K., Gao, F., Ge, B., Cui, H., & Li, W. (2023). Biotechnologies for bulk production of microalgal biomass: from mass cultivation to dried biomass acquisition. *Biotechnology for Biofuels and Bioproducts*, 16(1), 131. <https://doi.org/10.1186/s13068-023-02382-4>
- Sakthivel, R., Ramesh, K., Purnachandran, R., & Mohamed Shameer, P. (2018). A review on the properties, performance and emission aspects of the third generation biodiesels. *Renewable and Sustainable Energy Reviews*, 82, 2970–2992. <https://doi.org/10.1016/j.rser.2017.10.037>
- Sharma, G., Kumar, M., Irfan Ali, M., & Dut Jasuja, N. (2014). Effect of Carbon Content, Salinity and pH on *Spirulina platensis* for Phycocyanin, Allophycocyanin and Phycoerythrin Accumulation. *Journal of Microbial & Biochemical Technology*, 06(04). <https://doi.org/10.4172/1948-5948.1000144>
- Singh, R. N., & Sharma, S. (2012). Development of suitable photobioreactor for algae production – A review. *Renewable and Sustainable Energy Reviews*, 16(4), 2347–2353. <https://doi.org/10.1016/j.rser.2012.01.026>
- Soni, R. A., Sudhakar, K., & Rana, R. S. (2017). *Spirulina* – From growth to nutritional product: A review. *Trends in Food Science & Technology*, 69, 157–171. <https://doi.org/10.1016/j.tifs.2017.09.010>
- Staples, M. D., Malina, R., Olcay, H., Pearlson, M. N., Hileman, J. I., Boies, A., & Barrett, S. R. H. (2014). Lifecycle greenhouse gas footprint and minimum selling price of renewable diesel and jet fuel from fermentation and advanced fermentation production technologies. *Energy Environ. Sci.*, 7(5), 1545–1554. <https://doi.org/10.1039/C3EE43655A>
- Sun, J., Xiong, X., Wang, M., Du, H., Li, J., Zhou, D., & Zuo, J. (2019). Microalgae biodiesel production in China: A preliminary economic analysis. *Renewable and Sustainable Energy Reviews*, 104, 296–306. <https://doi.org/10.1016/j.rser.2019.01.021>
- Tjørve, K. M. C., & Tjørve, E. (2017). The use of Gompertz models in growth analyses, and new Gompertz-model approach: An addition to the Unified-Richards family. *PLOS ONE*, 12(6), e0178691. <https://doi.org/10.1371/journal.pone.0178691>

- Torzillo, G., & Vonshak, A. (2013). Environmental Stress Physiology with Reference to Mass Cultures. In *Handbook of Microalgal Culture* (pp. 90–113). Wiley. <https://doi.org/10.1002/9781118567166.ch6>
- Universitas Gadjah Mada. (2023). *PIAT UGM Luncurkan Pupuk Super Cerdas, Mampu Tingkatkan Produksi Teh Hingga Tiga Kali Lipat*. <https://Piat.Ugm.Ac.Id/>. <https://ugm.ac.id/id/berita/piat-ugm-luncurkan-pupuk-super-cerdas-mampu-tingkatkan-produksi-teh-hingga-tiga-kali-lipat/>
- Wang, H., Zhang, W., Chen, L., Wang, J., & Liu, T. (2013). The contamination and control of biological pollutants in mass cultivation of microalgae. *Bioresource Technology*, *128*, 745–750. <https://doi.org/10.1016/j.biortech.2012.10.158>
- Y. Shen, W. Yuan, Z. J. Pei, Q. Wu, & E. Mao. (2009). Microalgae Mass Production Methods. *Transactions of the ASABE*, *52*(4), 1275–1287. <https://doi.org/10.13031/2013.27771>
- Yan, K. T. H., Hie, I. S. Y., Samaranayake, E. A., Chang, J. L. K., & Wang, A. Z. H. (2023). Medium and process optimizations for *Euglena gracilis* with high biomass production enriched with protein. *Algal Research*, *75*, 103265. <https://doi.org/10.1016/j.algal.2023.103265>
- Zhou, X., Ge, H., Xia, L., Zhang, D., & Hu, C. (2013a). Evaluation of oil-producing algae as potential biodiesel feedstock. *Bioresource Technology*, *134*, 24–29. <https://doi.org/10.1016/j.biortech.2013.02.008>
- Zhou, X., Ge, H., Xia, L., Zhang, D., & Hu, C. (2013b). Evaluation of oil-producing algae as potential biodiesel feedstock. *Bioresource Technology*, *134*, 24–29. <https://doi.org/10.1016/j.biortech.2013.02.008>